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Document Legalisation

*(A new approach to the document legalisation process
using enterprise network technology)*

*A project submitted to Middlesex University in partial
fulfilment of the requirements for the degree of Doctor of
Professional Studies.*

DPS 5200

Mohammed Jaffer Hasan

*Institute of Work-Based Learning
Middlesex University*

*Candidate number: M00005093
September 2012*

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Table of Contents

ACKNOWLEDGMENTS	I
TABLE OF CONTENTS	II
SUMMARY	V
1 INTRODUCTION	1
1.1 CURRENT PROCESS	2
1.2 RELATIONSHIP WITH THE DOCTORATE PROGRAMME OF STUDIES	5
1.2.1 <i>Distinctive Area of Research</i>	6
2 TERMS OF REFERENCE/ OBJECTIVES	8
2.1 AIMS/ OBJECTIVES	8
2.2 LITERATURE REVIEW	9
2.2.1 <i>Background History</i>	10
2.2.2 <i>The Present Position and Development of Legalisation Affairs</i>	12
2.2.3 <i>Data Protection</i>	16
2.2.4 <i>Technology</i>	19
2.3 SUMMARY	23
3 RESEARCH APPROACH & METHODOLOGY	26
3.1 THE FOUR PILLARS	27
3.1.1 <i>The Researcher</i>	27
3.1.2 <i>Stakeholders</i>	29
3.1.3 <i>The Subject</i>	33
3.1.4 <i>Methodology</i>	36
3.2 DATA TYPE & ANALYSIS	38
3.2.1 <i>Interviews & Schedule</i>	41
3.2.2 <i>Triangulation</i>	44
3.3 CREDIBILITY & RELIABILITY	46
3.4 ETHICAL CONSIDERATIONS	47
3.4.1 <i>Ethics & Research in Government</i>	47
3.5 RESEARCH IN INFORMATION TECHNOLOGY	49
3.6 SUMMARY	54
4 PROJECT ACTIVITY	57
4.1.1 <i>Arab-British Chamber of Commerce</i>	59
4.2 THE QUESTIONNAIRE	61
4.2.1 <i>Questionnaire Data Analysis</i>	63
4.2.2 <i>Computer Software Tools</i>	66
4.2.3 <i>Analysing the Usefulness of the Questionnaire</i>	67
4.3 THE INTERVIEWS	68
4.4 THE SUBJECT	73
4.5 THE EXPERTS' REVIEWS	75
4.6 DATA ANALYSIS AND TRIANGULATION DILEMMA	77
4.7 SUMMARY	79

Table of Contents

5	PROJECT FINDINGS	81
5.1	CURRENT PROCESS	81
5.1.1	<i>Document Appearance.....</i>	<i>83</i>
5.2	EVALUATING THE CURRENT PROCESS.....	85
5.2.1	<i>Type of Legalisation</i>	<i>87</i>
5.2.2	<i>The Use of Stamps</i>	<i>91</i>
5.2.3	<i>Security Issues.....</i>	<i>94</i>
5.2.4	<i>Traceability.....</i>	<i>95</i>
5.2.5	<i>Availability.....</i>	<i>96</i>
5.3	PROPOSED PROCESS.....	97
5.3.1	<i>Document Appearance.....</i>	<i>99</i>
5.3.2	<i>Printing Materials.....</i>	<i>100</i>
5.3.3	<i>Numbering System.....</i>	<i>103</i>
5.3.4	<i>Barcode</i>	<i>104</i>
5.3.5	<i>Stamp Replacement.....</i>	<i>107</i>
5.4	TECHNOLOGY	108
5.4.1	<i>Communication & Hosting</i>	<i>110</i>
5.4.2	<i>Backup Servers/ Database Replication</i>	<i>113</i>
5.4.3	<i>Backup Process</i>	<i>114</i>
5.5	EVALUATING THE PROPOSED PROCESS.....	115
5.5.1	<i>Signature</i>	<i>115</i>
5.5.2	<i>Traceability.....</i>	<i>117</i>
5.5.3	<i>Availability.....</i>	<i>117</i>
5.5.4	<i>One Step in the Process.....</i>	<i>118</i>
5.5.5	<i>Mobility.....</i>	<i>118</i>
5.6	POTENTIAL PITFALLS.....	121
5.6.1	<i>Security.....</i>	<i>121</i>
5.6.2	<i>Eavesdropping</i>	<i>122</i>
5.6.3	<i>Denial of Service</i>	<i>123</i>
5.7	IMPLEMENTATION & ETHICAL CONSIDERATIONS	127
5.7.1	<i>Ethical Relativism vs. Absolutism.....</i>	<i>129</i>
5.8	SUMMARY	131
6	CONCLUSIONS & RECOMMENDATIONS.....	134
6.1	THE PROCESS OF CHANGE	138
6.1.1	<i>Unfreeze</i>	<i>138</i>
6.1.2	<i>Change</i>	<i>139</i>
6.1.3	<i>Refreeze.....</i>	<i>140</i>
6.2	RECOMMENDATIONS.....	143
6.2.1	<i>Professional impact.....</i>	<i>143</i>
6.2.2	<i>Bespoke Software & Partnership.....</i>	<i>146</i>

Table of Contents

7 REFLECTION	149
7.1 REFLEXIVITY	152
7.2 TRANSFER OF LEARNING TO THE WORKPLACE	153
7.3 THE IMPACT	156
7.3.1 <i>Mapping on Kolb's Cycle of Learning</i>	157
REFERENCES	161
BIBLIOGRAPHY.....	165
WEB SITES	166
APPENDIX A: INDEX OF TABLES & FIGURES	168
APPENDIX B: DATA PROTECTION	171
APPENDIX C: QUESTIONNAIRES & DATA ANALYSIS.....	178
THE QUESTIONNAIRE	179
SAMPLE OF RETURNS	181
DATA ANALYSIS SHEETS.....	183
INTERVIEW SCHEMATIC DIAGRAM.....	198
INTERVIEW SCRIPTS EXTRACTS	199
APPENDIX D: DOCUMENT LEGALISATION SAMPLES.....	202
SAMPLE 1: DOCUMENT LEGALISED WITHOUT STAMPS.....	203
SAMPLE 2: DOCUMENT LEGALISED WITHOUT STAMPS.....	204
SAMPLE 3: DOCUMENTS LEGALISED WITH STAMPS.....	205
APPENDIX E: REVIEWS & COMMENTS	210
AMB-1 REVIEW AND COMMENTS	211
OTB-1 REVIEW AND COMMENTS	212
APPENDIX F: INDUSTRY USE OF SECURITY IMPLANTS IN PRINTING TECHNOLOGY	221
APPENDIX G: INTERNATIONAL CONVENTION RELATING TO THE SIMPLIFICATION OF CUSTOMS FORMALITIES.....	224

Summary

Documents issued in one country often have to be legalised (authenticated) before they can be used in another country. Different types of documents (legal papers) such as birth, death and marriage records, deeds of assignments, powers of attorney, commercial invoices etc. need to be legalised by the Destination Country before they can be assumed legal. Legalising a document simply means confirming that official documents are sealed and signed either with an Apostille Certificate for countries that are part of the Hague convention 1961, or with a Certificate of Authentication where countries are not party to The Hague Convention. Legalising (authenticating) documents is a process of verification of signatures.

The aim of this research is to critically examine the current processes of document legalisation, through analysing and establishing the opportunities that lie before the organisation to implement a new process in document legalisation to replace the prolonged historical process currently used in some countries, specifically the United Arab Emirates (UAE). Using enterprise network technology¹, this research will also produce a solution to the risks involved, the implementation and the security, and it will also analyse the impact of such implementation to the organisation.

Considering the project, which explores a very sensitive area in the organisation and one of major change to the organisation's business process, the authenticity of data must be given a high priority. Therefore, an online survey may not always be a legitimate approach. A paper survey may well fit the purpose but, on the other hand, a detailed interview and/ or telephone survey will be even more accurate. Hence I made use of a mixed method (qualitative/ quantitative) approach.

The business of document legalisation goes back in history by more than two thousand years and, therefore, needs to be explored historically, establishing how the business of the document legalisation process has evolved alongside the established professions in government today, and defining the areas of concern such as security, availability, traceability and mobility. This will pave the way for an investigation to evaluate a new process that can utilise available technology to solve the areas of concern.

The current process of Document Legalisation has been used for many years and a change in this process may take some time. There are many possible pitfalls that the programme may encounter, one of which is the change to a process that has not yet been established in any other area of the world, so there are no other occurrences in this subject for comparison. A clear and informative document explaining the project – a Specific, Measurable, Achievable, Realistic and Time Limit (SMART) description of the project – will solve any conflict.

¹ An enterprise network is a network of many isolated departmental and/ or workgroups that are connected into an intra-company network, allowing all network users to access data and/ or resources.

Considering that the research in this complex topic runs in history for more than two thousand years, a mixed method approach should be used. However, to elaborate the methodology that can explore the underlying philosophical assumption taken by researchers a mixed methodology term should be more accurate, due to the history and composition of knowledge that have been accumulated in this topic. Hence clarification is needed to establish reasons and define a new approach in the document legalisation process.

In addition to the historical literature, the main groups taken into consideration to form the data are the decision makers, interviews with senior staff and a survey for employees working in the field of document legalisation. To find reasons for every step in document legalisation, experiments should not be ignored. The reason for this is to clarify the area of data mismatch.

The scope of the project will discuss the current risk involved in the current process of legalising documents, identifying its weaknesses, and the needs and requirements of the newly proposed process with recommendations to establish a solution utilising state of the art technology to provide a new secure, mobile and traceable process which is available 24/7.

Chapter One

1 Introduction

Documents² issued in one country (Origin Country) often have to be legalised (authenticated) before they can be used in another country (Destination Country). Legalising a document simply means confirming that a signature, seal or stamp appearing on a document is genuine. It is also important to note that legalising a document does not mean that the content of the document is accurate.

Different types of documents (legal papers), such as birth, death and marriage records, deeds of assignments, powers of attorney and commercial invoices etc., need to be legalised by the Destination Country before the document can be assumed legal.

The findings of this research recommend a method and will introduce a tool to evaluate a new method (process) of document legalisation as an alternative process to that currently used. The research proposes a fully-fledged strategy for the organisation. The various elements are categorised into system security, staff mobility and combined management. The relationship between relevant concepts and theories with the practical scenarios recommended in the research form a major part of the investigation.

Introduction

² Such as powers of attorney, academic certificates, birth, death and marriage records etc.

1.1 Current Process

The current process of the legalisation of a document goes through multiple stages. To start with, the document must be verified by the Origin Country (by the local Ministry of Foreign Affairs), and then the agent for the Destination Country (embassy/ consulate) will verify and legalise the document. Accordingly, various stamps and signatures are affixed by the appointed personnel and the document is handed over to the person (Owner). The document then must be verified by the Destination Country (Ministry of Foreign Affairs – MOFA). The MOFA verifies that the stamp, seal and signature on the document are genuine, affixes its own stamp, and seals with a signature.

The document (at this stage) is approved and legalised and can be used in all government departments in the Destination Country. When this document is then presented in any department in the country it is visually clear that it is legal because the Ministry of Foreign Affairs has approved it. There is no other verification other than its visual appearance. Briefly, the steps to legalise a document in the Destination Country after it has been legalised by the Origin Country are:

- The embassy/ consulate visually analyses that the document is attested and legalised by the Origin Country. This is done by the visual appearance of the document and the agent (consul) will then add the following (usually on the back of the document):
 - A stamp (similar to those used in the mail/ post), for financial purposes only.
 - Embassy seal.
 - Appointed agent signature.
- Ministry of Foreign Affairs (MOFA) – The document needs to be verified by the MOFA of the Destination Country by adding:
 - A stamp (similar to those used in mail/ post), for financial purposes only.
 - Ministry seal.
 - Appointed agent signature.

The above process is currently the routine used in the UAE and all the members of the GCC (Gulf Cooperation Council), which is an inherited process from Great Britain as they were protectorates of Great Britain.

This can be linked to the history of document legalisation in which most of the current methods were based on visual appearance. However, in the midst of the technology revolution and the dramatic change in communications over the last decade, and after the internet established itself in every corner of both large and small businesses, the thought of utilising this phenomenon was seen as an exciting technological development and was highly recommended by technology experts. To graphically illustrate the main process, Figure 1-1 shows the steps of document legalisation:

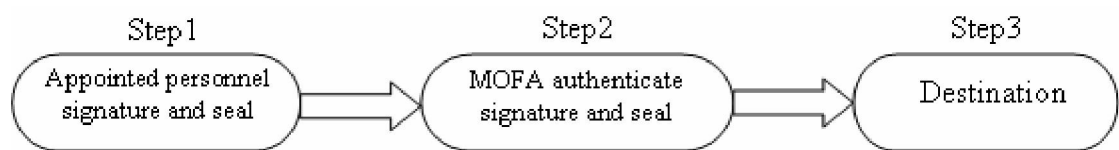


Figure 1-1: Document Legalisation Steps

With the unprecedented business activity in the United Arab Emirates (UAE³), along with the demand for modernising government processes of work to bring them in line with industry, governments nowadays need more effective methods to enhance work processes rather than allowing them to become overheads adding extra cost.

Looking at the fast growing business activity in the United Arab Emirates (UAE), the amount of work needed to legalise a document and the absence of a method to check a document's authentication at its destination means that negating errors in authenticating a legalised document is paramount.

As information technology (IT) plays a very important role in any modern organisation (it is the backbone of any organisation), and while the UAE is becoming the hub of business in the Middle East, an understandable government concern lies in the need to become more in line with business activity.

A country (United Arab Emirates) that shows a huge business activity requires administrative tools to cope with this business activity. According to TeleGeography

³ The UAE Embassy has given permission to be stated in this report, as evidenced in Appendix E.

Research (2006), the UAE utilises 1.5% of the world's outgoing international traffic and ranks 12th in the world for outbound communication. In business activity, the total imports in 2008 were estimated to be worth 565,719.82 million Dirham, according to the foreign trade statistics of the Ministry of Economy Central Statistical Department (2008), where these business activities need to be legalised based on invoices issued from the Origin Countries.

Added to this, the huge foreign workforce in the country is exceeding the original population by a factor of four. According to the official government website, UAE Interact (2008), *"The higher growth in the expatriates boosted their ratio to the whole population from around 80.1% in 2006 to 80.7% in 2007. The report projected the ratio to rise to 81.2% in 2008 and 81.7% in 2009"*. The increase in expatriates and the growing business activity requires a change in the process of documents legalisation; the need to cope with document legalisation for all the increased business activity is paramount.

It is obvious that a legalised document may be signed and a duty stamp affixed, but this is not recorded in any sort of document at its destination. The only method of authenticity is carried out by the recipient's visual recognition at the document destination. It appears that the historical reason for this process is that a document cannot be verified without the actual visual appearance of the document itself. This may have been due to the absence of technology for recognising the document's validity, which adds to the difficulty caused by the lack of any other sort of communication between the country's various departments. Keeping the validation affixed to a document is the only means of recognising the document's authentication.

In the past, the necessary technology was not available for use. Nor was there the same demand for document legalisation that there is now. Previously the method used offered sufficient security. However, there is now technology available that can be utilised to suit the requirements needed to enhance the process and security. It is sensible, therefore, to explore a different method to the current outdated process.

The organisation that represents a country which is growing in speed like never before, with a huge demand for improvement (due to the current growth of business) and having to serve business activity, should arrange itself to suit the current business escalation. Using state of the art technology to do this is extremely important.

This research project was designed to assist in the understanding of the proposed new up-to-date, cost-effective and secure method for the legalisation process. It provides outlined functional specifications and requirements. It is designed to direct the project, system development and its design as well as to give a better insight into the procedures involved in legalising a document electronically.

In this project, I will critically discuss the security appraisal, the method of legalisation and the recommendation/ definition of a new method of document legalisation. The scope of the project will discuss the current risk involved with the current process of legalising documents, and the needs and requirements of the newly developed system.

1.2 Relationship with the Doctorate Programme of Studies

This project is the final part of my submission for the Doctorate in Professional Studies (DProf). It flows from my successful Masters in work-based learning and subsequent RAL Level 5/8 claims, which have involved a number of interlinking components and modules.

The RAL claims outline the knowledge, skills, leadership and responsibility I have experienced during my ongoing profession related to the design and implementation of enterprise network technology, developing an IT department and project management. These are all connected to the modernisation of my organisation in relation to information technology.

Thus the RAL Level 5/8 claims above may be regarded as the foundational experience that was presented as the first volume of a contribution to professional practice and allowed me to progress to the current DPS, which is the final volume to complete the project.

This project, therefore, does not stand alone but builds upon earlier work in many projects and designs in IT involving complex knowledge, responsibility and ethical consideration. This work contributes to academic credits achieved as part of the Doctorate programme accounting for 160 credits at Level 5/8. These credits have determined the requirement of this project, which should be 200 credits at level 8.

This foundational experience presented in the RAL claims constituted the first volume of my contribution to professional practice, allowing me to progress to this second volume in the form of the project described herein.

1.2.1 Distinctive Area of Research

Whilst this project is new in its domain (currently, no or little academic study has been made in document legalisation), I hope this project will fill the vacuum and will be of interest to the wider audience and academics as it may be one of the first research projects in this topic.

Research in a new subject sometimes has its weaknesses, one of which is the lack of available documents (research) and data, which are assumed a vital element in any research. Yet the very assumption that I make in investigating this subject is to clarify to the wider audience, such as academics and government decision makers, that some routines and processes used need to be investigated and analysed in view of modern technology.

Document legalisation is a subject which dates back in history to the Roman Empire. It needs to be investigated and analysed by many types of research tools. Its historical side confirms the historical composition of knowledge in this subject and, therefore, needs to be investigated critically and historically. A mixed method may fulfil some areas in this subject, but due to the complexity and nature of the subject a mixed methodology at an epistemological level is needed.

The value of this project will not be confined to the practical need of the organisation and/ or organisations running the same process, such as GCC countries, but also to the researchers and academics who will explore this subject further in the future.

Chapter Two

The literature volume in many subjects reflects the attention of scholars/ researchers and/ or the subject age. In business, document legalisation dates back in history to the Roman Empire and is a daily business that can be assumed to have a routine used by many establishments and personnel who deal with foreign governments. Very little previous literature exists in this field.

**Terms of Reference, Objectives
& Literature Review**

2 Terms of Reference/ Objectives

2.1 Aims/ Objectives

The aim of the research is to analyse the opportunities that lie before the organisation to implement a new process in document legalisation. The research will also produce a solution to the risks involved and to implementation and security, and will analyse the impact of such implementation on the organisation.

It is important to understand the change from a manual process to an electronic method in which the system will be a backbone to all parties involved in this process.

The project explores a new legalisation process in relation to the requirements and needs of two tiers – the embassy/ consulate as a branch and the Ministry of Foreign Affairs as its headquarters, and the other government department (such as the Ministry of Finance) as the recipient and/ or the final destination of the documents. The report investigates the main purpose of implementing this process with the following general objectives:

- To review the advantages and disadvantages of the current process, exploring the main benefits and the disadvantages to the organisation's needs.
- To study the improvement in business attributable to implementing a new approach to legalisation.
- To examine the critical issues regarding security in the enterprise network and the existing solution.
- To formulate a conclusion with recommendations for the organisation.
- To examine the benefits of the new proposal, both internally and for the external parties dealing with the organisation.

2.2 Literature Review

It is true that literature forms a solid information base and, therefore, it is important to triangulate findings of research. However, in new subjects that have not yet been researched and where finding previous literature and/ or research is not possible, the argument for the study of literature may be questionable. Cooper (1988, p.104) argues that a *“Literature review uses as its database reports of primary or original scholarship and does not report new primary scholarship itself. The primary reports used in the literature may be verbal but in the vast majority of cases reports are written documents. The types of scholarship may be empirical, theoretical, critical/analytic or methodological in nature. Second a literature review seeks to describe, summarize, evaluate, clarify and/or integrate the content of primary reports”*. Nevertheless, the reality of the project proves that exploring and synthesising findings with literature is arguable.

Literature in research is usually considered as the review of original scholarship. However, in a subject such as document legalisation where literature and/ or research in the subject is absent, the context of such argument is debatable as very little critical and evaluative research has been published on the subject.

Yet “the subject” is one of a known process that can be assumed to be a routine used by many people and/ or companies dealing with foreign governments or working in a foreign country. In addition, the history of this subject assumes that it is a historical routine still in use to date. The search for answers to the most famous questions of “why?” and “how?”, and the origin of documents legalisation, requires a study of the history of this subject.

2.2.1 Background History

The history and context of this topic needs to be explored to give an insight into what is presumed to be a newly formed topic. Document legalisation is the complement of what is known as ‘the Notary’ in civil law. There may not be much in the way of written records of the history in this field, but the subject can be traced from the period of the Roman Empire when a number of public officials known as *scribae* recorded events in official statements. *Scribae*, in time, rose to the higher rank of a learned profession, and some were officially attached to the Senate and/ or the Court of Law.

History reveals that there was some kind of activity in authenticating documents before the so-called Notary in civil law. In the time of Cicero (106-43BC)¹, a new system of shorthand was invented and marks/ signs called *notae* were used to authenticate documents that were created when a writer took a statement called a *notaries*. In time, the title *Notarius* was given to the Registrar attached to the courts and/ or governors (Ready and Brooke, 2002).

The need to authenticate documents (deeds, court proceedings, etc.) guides us to the use of official seals prepared and attested to by *Tabellions*² – the equivalent of the Notary in civil law.

After the fall of the Western Roman Empire, the conquered provinces were divided into districts and the *Notarius* would then travel to cities/ courts for the same reasons. Sales and transactions of higher importance would then be sealed with the official seal of the court.

Around AD803, and by the direction of the Emperor, notaries were appointed to accompany commissioners in their travel around the districts, their job being to authenticate documents. At this time, all abbots and bishops were provided with notaries.

It was not until the medieval period when the German Emperors (after Augustus) and other bodies, such as municipal authorities and corporate bodies, were granted the same rights as a *Notarius*. Around the 12th Century, the Pope was assumed to have the right to appoint notaries outside of the Papal States. Cheny (1972, p.4) points out that William

¹ Marcus Tullius Cicero (106-43 BC) was a Roman statesman, lawyer and philosopher. Cicero is widely considered as one of Rome's greatest orators and prose stylists (Rawson, E., 1975).

² A thin tablet covered with wax.

Durand³ wrote in his *Speculum* stating “a notary public appointed by the Emperor or the Pope or by someone to whom they have granted this by special privilege, may perform his office and draw up instruments anywhere, even in France or England or Spain, not only in lands specially subject to the Emperor or the Pope”. This formed the basis of what is now known as ‘the Consul’, whereby the Consul is assumed to be the writer and/ or the *Notarius* who can attach a seal and authenticate a document.

At present, the Consul is assumed to be a *Notarius* to whom the capacity is given to authenticate a document and affix marks/ signs to approve a document and, thereafter, a document is assumed to be legalised. It remained this way up until the 12th Century, when notaries (*tabelliones*) were given a higher degree of authenticity. They then started to use an official seal for each and every document that needed to be authenticated.

With the arrival of foreign notaries in England, the Archbishop of Canterbury was then authorised by the Pope to appoint notaries. This was the start of document legalisation moving on to a global dimension. Looking back in history, it seems that there were no other methods that could be used to authenticate a document other than visual marks and signs, as the only way of enabling a document to be recognised was to attach the signs of authenticity to it.

The history of the notary confirms that this type of business is not new. Nor does the act of authenticating a document need to be studied as a new phenomenon to set a law or establish the reason for which a change to law or process is necessary. The history of this subject at an epistemological level reflects the critical views of researchers in the assumption that social reality is historically composed and that it is replicated by people. This assumption is, therefore, apparent in the history of notaries where little has changed in the notary process since the time of the Roman Empire.

It is quite apparent that the main reason for establishing document legalisation is the need to authenticate documents to be legally used in any lawful area of business. This guides us again to look at the present time and study the area where a change can take place.

³ The secretary to Pope Gregory X.

2.2.2 The Present Position and Development of Legalisation Affairs

According to the records of modern history, the first formal records of an organisation kept by a group of merchants were established in Marseille, France. Bishop (1918, ch.1, p.1) stated that “*France has the honor of establishing the first mercantile association under the name of Chamber of Commerce. This occurred early in the year 1400, under a government grant which vested it with extraordinary jurisdiction in deciding commercial questions. The society was several times suppressed and regularly restored, and received a definite organization in 1650*”.

At an international level there were no international regulations to the trade with regard to document legalisation. It was not until the year 1923 when the official regulated certification services were established at the International Convention Relating to the Simplification of Customs Formalities that was held in Geneva⁴, which gave governments the power to delegate the administration of the certification process (please refer to Appendix G, the British Ratification, deposited August 29, 1924).

The process of certification was established between governments and all equivalent organisations to the Chambers of Commerce around the world. This was the start of modern document legalisation for commercial trading which is still in use today. It should be noted that a document that is authenticated by the notaries in one country should not be assumed to be acceptable in another foreign country. This means that the foreign government needs to appoint a person to act as their agent to authenticate the document prior to its arrival in the foreign country. For this reason, each and every country needs a local agent (Consul) who acts as a *Notarius*.

The Consul then will authenticate the document and attach seals/ marks to it. It is now the standard that each government sends its Consul to other countries to authenticate documents. The main legal approval for that document is the signature of the Consul. Change at a social level and huge changes in technology form the criteria to enhance this process; enhancing speed, accuracy and security are the ultimate goals of this project.

Looking at this project from a technical point of view, textbooks are a valuable source of information. However, in our profession (IT), rapid changes in technology mean

⁴ The 1923 Geneva Convention relating to the Simplification of Customs Formalities (Article 11), updated by the Kyoto Convention.

that textbooks are easily outdated. Technology in this field is based on development, and, therefore, the need for new up-to-date information for a project of this size is paramount.

The sources of data, on the other hand, cannot be acquired from researchers due to the lack of research on this subject. It is, therefore, important to establish a channel that can be used as an alternative to source data from government whitepapers/ budgets and circulations. This data should originate from many different organisations for the purpose of triangulation and to form a coherent level of knowledge.

There have been some attempts to solve these prolonged problems of the document legalisation process but, then again, attempts to change or enhance the process have been taken subjectively; either the problem was not studied correctly or in some cases there were even misunderstandings of the process itself.

This can be seen in some attempts such as that by the Kuwait Ministry of Foreign Affairs, as reported in their Yearly Report in 2006. The report concluded that the Legalisation Department in the Ministry of Foreign Affairs had opened a Legalisation Mall to deal with the volume of legalisation. Figure 2-1 shows the activity of the newly opened Mall for the first three weeks, illustrating that the total number of documents legalised was 5259.

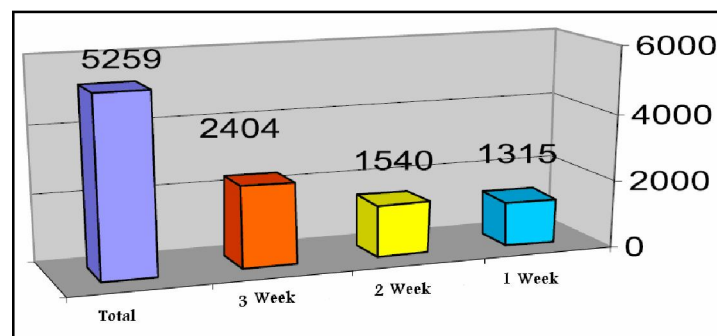


Figure 2-1: Activity of Kuwait Mall (first three weeks activity). Source: Yearly Report 2006, Kuwait.

The report did not mention any research, nor did it reveal any reasons for the use of a document Legalisation Mall. The assumption was, therefore, that it was set up to redirect queues into another building. The report did not establish any changes to the process itself.

The report indicates the volume of work and a solution that was perceived by opening a branch to solve the huge demand. However, interestingly, this did not really solve the problem; it simply displaced queues into another ‘building’ rather than investigating the process itself and giving any reasoning for the solution.

It is, therefore, important to reveal the absence of integrity in the process and find a solution to the process itself, rather than trying to resolve a cosmetic solution such as relocating the queues from one building to another. On the other hand, the solution described indicates the need for change and the volume of work. The solution neglected the need for change in a process that is outdated and in desperate need of a total change.

In November 2003, a Special Commission took place in The Hague to review the Apostille⁵. The Commission was set up to discuss the apparent changes in today’s society as The Hague Convention 1961 enactment was drawn up in a completely different society to that in 2003, which lacked the same level of technology. The 1961 Convention did not take into account important technical developments, in particular the huge development in the computing industry, which could have many positive effects on the process of creating and registering Apostilles such as lowering costs whilst increasing efficiency.

It should be noted that the operation of legalisation in the Arab world, in particular the Gulf countries and specifically the United Arab Emirates, is not part of The Hague Convention. Nevertheless, there is a need to change the method of legalisation, especially considering that The Hague Convention is a relatively modern process in comparison with the process applied in the UAE and the other Arab countries.

The First International Forum on E-Notarisation and Legalisation (2005) concluded that *“Although this evolution could not be foreseen at the time of the adoption of the Apostille Convention, the Forum attendees stress that modern technologies are an integral part of today’s society and their usage a matter of fact. In this respect, the Forum attendees also endorse the SC’s conclusion to the effect that the spirit and letter of the Convention do not constitute an obstacle to the usage of modern technology”*. It is, therefore, important to note that the original Convention cannot be assumed to be an obstacle, and hence a process of change incorporating the use of technology may be accepted.

⁵ Apostille is the equivalence of Document Legalisation to those countries signed to The Hague Convention.

The move towards electronic signatures and electronic documents is now active, as stated by the Special Committee in the First International Forum on E-Notarisation and Legalisation (2005): “*Most countries have now enacted legislation recognizing the legal effect of electronic signatures and electronic documents. States are encouraged to continue reviewing and enhancing the legal framework for allowing the use of electronic signatures and electronic documents*”. The forum suggests that implementing a solution based on an electronic method of legalisation may be the best way forward.

As for securing the process, it is recognised that the use of an electronic method will enhance the security of the process. The Forum on E-Notarisation and Legalisation 2005 stated that “*electronic registers may provide a powerful deterrent to fraud and abuse of the Apostille*”. According to their recommendation, the information requirement that needs to be adhered to in the electronic registers include the following:

- the number and date of the Apostille;
- the name and capacity of the person who has signed the underlying public document; and
- if the document is not signed, the name of the authority which affixed the stamp or seal on the public document.

It is understood that the interested party (any person who has been presented with an Apostille and who requests a verification of the relevant register entry) can verify or query the registration of a document. The Committee also recommended that “*In order to query an electronic register database online, the interested party should enter at least the number and date of the Apostille appearing on the Apostille*”. Allowing for two entries in the search criteria should be sufficient to protect the ‘data subject’ data, ensuring the database cannot be randomly accessed. Introducing a more sophisticated method of navigation during the transaction, such as document reference numbers, can secure the data even further.

The Hague Commission identified four stages in the issuing of an Apostille; the recommendation was mainly related to the change in IT:

- Maintenance of a secure electronic database of signatures for the purpose of verifying the signatures appearing on public documents for which an Apostille is requested;
- Use of word processing technology to complete the information to appear on the Apostille;
- Use of electronically reproduced signatures of the issuing authority to be inserted through secure electronic means and printed on the Apostille;
- Maintenance of an electronic register.

Following the recommendation and conclusion of the Special Committee, Bernasconi (2006) concludes that “*The goals of the e-APP may seem ambitious and far-reaching but we feel that at this time there are few remaining practical obstacles to the effective and cost-efficient implementation of technology to strengthen the important benefits of the Apostille Convention*”. The idea is to enhance and improve the service in security, speed and availability.

It is, therefore, wise to think that change is inevitable and that the current process is outdated and needs change. The process of change that some countries may have already started can always be used as an experiment to evaluate the method and process of change. It is also an indication that the process needs changing and/or updating to suit the current business climate, even though it is relatively new as the Hague Convention was established in 1961 whereas the process in the UAE was established earlier in 1923.

2.2.3 Data Protection

While dealing with third party data (data subject) forms a minimal part of the proposed process, it is important to establish good and coherent knowledge about the legal impact of using such data. For example, there may be a need to implement changes in the way data is stored to ensure that data protection legislation is adhered to.

The storage of details of such as names and dates of birth etc. in some documents in a database means that the data store should be governed by the Data Protection Act. The information and data details of the legalised documents are assumed to be the property of the customer (data subject). The organisation storing the data (data controller) should, therefore, adhere to the data protection legislation of their country.

As and when people (data subjects) submit a document to the agent, initiating the process of storing data related to the document to be legalised, the processing of the data should be governed by data protection legislation. However, data protection legislation is not implemented in many countries.

Data protection has not yet been globally accepted, as can be seen by the fact that each and every country uses a different approach and law for data security. Data especially that of the global network (internet), may be obtained and stored in many countries that do not have any data protection legislation. When looking at countries that have adopted data protection legislation, differences can be seen. Data that can be assumed to be secure in one country may not be in another. This can be seen in the comparable data protection act table in Appendix B.

It is, therefore, important to establish and design a system to suit all needs in all countries that requires very little technology. In this project, the main reason for studying data protection legislation is to make sure that any implementation of the solution proposed in the work ensures that the data stored covers limited information that is not viewable by anybody except the “data controller” and the data subject. The UK Ministry of Justice (2008) said that *“As new technologies have developed, the secure storage and careful sharing of personal information held by both the public and private sectors has become paramount”*. This statement may be understood as an assumption that the protection of the data relies on the strength of computer data security rather than human management of data security.

In past events, the failure of data security has been largely caused by the failure of human management rather than computer security. This can be concluded by analysing recent news and events. Table 2-1 shows recent losses of recorded data:

Date	Event
July 2007	Loss of a computer hard drive containing details of 5,000 employees of the justice system (BBC, Sept. 2008).
Nov. 2007	Two computer discs holding the personal details of all families in the UK with a child under 16 have gone missing (BBC, Nov. 2007). <i>“The Child Benefit data on them includes name, address, date of birth, National Insurance number and, where relevant, bank details of 25 million people”</i> .
Dec. 2007	The Driver and Vehicle Agency in Northern Ireland has lost the personal details of 6,000 people (BBC, Dec. 2007).

Dec. 2007	ID crisis deepens as 3m drivers' details lost (Telegraph, Dec. 2007).
Jan. 2008	Police are investigating the theft of a laptop from a Royal Navy officer which held the personal details of 600,000 people (BBC, Jan. 2008).
June 2008	Six laptops stolen from NHS hospital held data on 20,000 patients (Times online, Jan. 2008).
July 2008	More than 100 USB memory sticks, some containing secret information, have been lost or stolen from the Ministry of Defence since 2004, it has emerged (BBC, July 2008). <i>"The department also admitted that more than 650 laptops had been stolen over the past four years - nearly double the figure previously claimed."</i>
Aug. 2008	Firm 'broke rules' over data loss. <i>"Home Secretary Jacqui Smith has blamed a private contractor for losing the details of thousands of criminals held on a computer memory stick."</i> (BBC, Aug. 2008).
Sept. 2008	Data loss exposes teachers' records, General Teaching Council loses encrypted disk containing 11,000 records (Vnunet, Sep. 2008).
Oct. 2008	Another data breach as laptop is stolen. <i>"A leading rail union called today for an urgent inquiry after a laptop containing personal details of 150,000 workers in the industry was stolen."</i> (Independent, Oct. 2008).

Table 2-1: Some Recorded Events of Data Loss

This concludes that the real problem in these cases was not in the computers' security but rather due to mismanagement and negligence from the human aspect. None of the above cases attribute the loss of data to computer security.

This means that, assuming that the data should be protected and encrypted to be unintelligible (even after it is lost), this problem of data loss cannot be rectified. Instead, in order to solve the problem, an embedded security needs to be established in which computer security processes can help to protect the data even after data loss.

This establishes that the protection of data is the responsibility of the "data controller" who should act with a reasonable level of human security to protect the data stored about "data subjects".

It is, therefore, argued that a better data management method needs to be deployed rather than relying on computer encryption to solve the problem. Even though the measures of data encryption may well be one of most important factors in protecting data "after loss", it is also important to pass responsibility to the "data controller" to exercise a reasonable level of human security towards the data stored.

This is reflected in the published Statutory Data Sharing Code of Practice on Sharing Personal Data which includes the very necessary action and practical guidance to:

- impose monetary penalties on data controllers for deliberate or reckless loss of data;
- inspect central government departments and public authorities' compliance with the Data Protection Act without always requiring prior consent;
- require any person, where a warrant is being served, to provide information required to determine compliance with the Data Protection Act;
- impose a deadline and location for the provision of information necessary to assess compliance;
- publish guidance on when organisations should notify the ICO⁶ of breaches of the data protection principles.

2.2.4 Technology

Implementing any new technology in an enterprise network⁷ may expose the enterprise network to a new threat, particularly as the network will have to increase the IP range. The volume of traffic will also increase and a more open network port will be available to hackers.

In due course, I investigated and analysed if using the internet as a carrier (medium) is suitable. My main objective was to analyse the usefulness of using the internet as a medium, which may incur extra communication overhead costs, committed to reducing any risk associated with IT investment through the appropriate design, development, configuration and implementation of the system.

As one of many applications that rely on IP networks, the internet is known to be a host of many security threats. This sensitive part of the company structure needs careful analysis. Such threats include Denial of Service (DoS) or Distributed Denial of Service (DDoS⁸) attacks (which may bring the network to a standstill), Eavesdropping (which is unauthorised interception) and internet viruses and worms – these areas are where the bulk of threats of the internet lie. Therefore, it is important to secure the internet as it is with all other network applications.

⁶ Information commissioner's office.

⁷ An enterprise network is a network of many isolated departments and/ or workgroups that are connected to an intra-company network allowing all network users to access data and/ or resources.

⁸ DDoS occurs when multiple systems flood the bandwidth or resources of a targeted system.

Calculating the security risk has always been difficult due to the hidden impact of security violation. Therefore, it is hard to assess and quantify security risks especially when considering global network architecture. In a survey by PricewaterhouseCoopers (2010), in answer to the question “*What was the overall cost of an organisation’s worst incident in the last year?*” an alarming overall cost for security violations of £280,000 – £690,000 was given in comparison with £90,000 – £170,000 in the 2008 survey. Figure 2-2 shows the breakdown of security breaches according to the PricewaterhouseCoopers survey:

	ISBS 2010 small organisations	ISBS 2010 large organisations
Business disruption	£15,000 - £30,000 <i>over 2-4 days</i>	£200,000 - £380,000 <i>over 2-5 days</i>
Time spent responding to incident	£600 - £1,500 <i>2-5 man-days</i>	£6,000 - £12,000 <i>15-30 man-days</i>
Direct cash spent responding to incident	£4,000 - £7,000	£25,000 - £40,000
Direct financial loss (e.g. loss of assets, fines etc.)	£3,000 - £5,000	£25,000 - £40,000
Indirect financial loss (e.g. theft of intellectual property)	£5,000 - £10,000	£15,000 - £20,000
Damage to reputation	£100 - £1,000	£15,000 - £200,000
Total cost of worst incident on average	£27,500 - £55,000	£280,000 - £690,000
<i>2008 comparative</i>	<i>£10,000 - £20,000</i>	<i>£90,000 - £170,000</i>

Figure 2-2: Security Breaches Survey 2010. Source: PricewaterhouseCoopers (2010)

According to the report, most of the security threats are from viruses and attempted network breakthroughs. Figure 2-3 shows a comparison between 2010 and 2008:

62% <i>(21%)</i>	of large respondents were infected by a virus or malicious software in the last year.
61% <i>(31%)</i>	of large respondents have detected a significant attempt to break into their network in the last year.
15% <i>(13%)</i>	of large respondents have detected actual penetration by an unauthorised outsider into their network in the last year.
25% <i>(11%)</i>	of large respondents have suffered a denial of service attack in the last year.

Figure 2-3: Threat Attacks in 2010 and 2008. Source: PricewaterhouseCoopers (2010)

The source of security breaches, however, may identify the risk and, therefore, needs to be considered. 80% of threats are from external sources, as identified by Maple (2010), whereas 2% are from internal and 18% are from business partners. Figure 2-4 shows a graphical representation of the sources of threats:

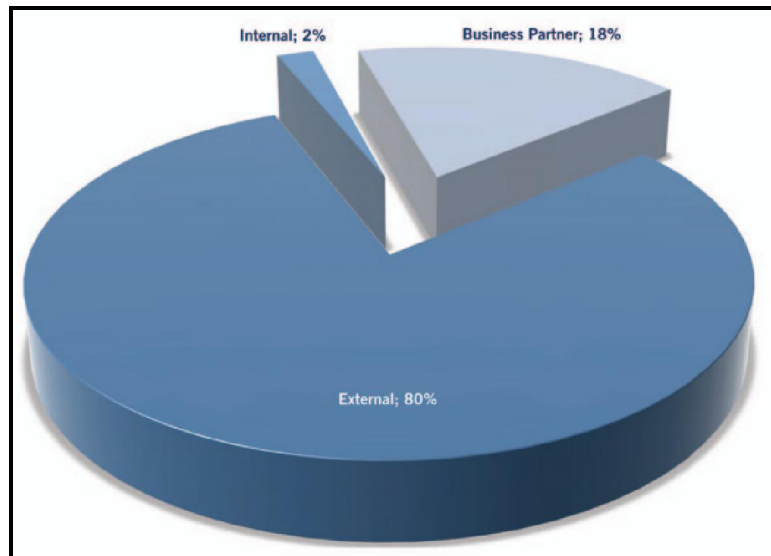


Figure 2-4: Graphical Representation of Threats Sources. Source: Maple (2010).

It is also important to notice from the reports conducted by Maple (2010) that 85% of sources of threats targeted the financial side of the transaction.

Database implementations are vulnerable to several well-known security threats, some of which are inherited from the internet such as viruses where a server may be the target of such threats. Any network may be vulnerable to denial of service attacks which simply overload the capacity of the system. In this project the problem may be especially severe because of the sensitivity of data or delay. To protect the integrity of the system infrastructure, organisations must be responsive to track the adoption of periodic security audits and participate in industry collaborative efforts. This is another overhead for a company. However, IT staff can be easily trained to take care of such threats as it is routine work within the IT Industry.

Data encryption may solve many problems (making it unintelligible when accessed by unauthorised persons) but relying on computer-based security cannot be absolute. A recent report by Computer Weekly (May 2009) revealed lapses on a physical security level. A study conducted by Siemens Enterprise Communications revealed worrying findings that a consultant managed to access secure areas of some companies, including

being able to retrieve users' names and passwords, while posing as an IT supporter over the internal phone line.

Social engineering⁹ can be utilised to crack the 'human firewall' security at a physical level. This indicates that the real dilemma of security may guide us to the drawing board, investigating part of the education in the IT syllabus and increasing the awareness of staff (human firewall) rather than relying on the computer's security. Hadnagy (2011) acknowledged that "*Social engineering is used every day by everyday people in everyday situations. A child trying to get her way in the candy aisle or an employee looking for a raise is using social engineering. Social engineering happens in government or small business marketing. Unfortunately, it is also present when criminals, con men, and the like trick people into giving away information that makes them vulnerable to crimes. Like any tool, social engineering is not good or evil, but simply a tool that has many different uses*".

Likewise, Higgins (2008) reported that the Chief Executive Officer of RedFlag Security said "*organizations typically are focused on online identity theft from their data resources and do not think about how the same data can literally walk out the door with a criminal posing as an auditor or a computer repairman*". This is certainly the reality if physical security is ignored or even if educating staff about the real threat of social engineering is ignored. Higgins (2008) reported an alarming finding by stating "*A researcher performing social engineering exploits on behalf of several U.S. banks and other firms in the past year has "stolen" thousands of identities with a 100 percent success rate*". This can only be assumed to be the failure of management. It is, therefore, wise to state that organisations may require the addition of a "human firewall" to the network firewall.

Planning a document legalisation method for an organisation involves some basic and fundamental steps: the evaluation of the organisation's needs, the existing data network readiness and the assessments of the network infrastructure where upgrading may be required, especially if the network is dated and if the company is on the verge of change.

⁹ A method for which to use and/ or manipulate people to perform an act in which it allows the perpetrator to gain access to confidential information, Hadnagy, C. (2011).

Before processing and implementation can take place, it is important to produce detailed design documentation which includes security design. It is important to remember that implementing any project that involves the use of the internet as a carrier must take account of the need for security.

2.3 Summary

In brief, the subject of document legalisation cannot be assumed new, nor is it fixed and it cannot be changed based on country needs. The process was inherited and, therefore, it is a classic example of social knowledge for which the reality of this topic is historically composed and replicated by people. This is apparent in the history of notaries, where little has been changed in the process since the time of the Roman Empire.

The apparent changes in today's society and technology should be accounted for whereas the Convention in 1923 (quite rightly) did not take into account important technical developments, in particular the huge development in the computing industry which could have many positive effects on the process of creating and registering Apostilles, such as lowering costs and increasing efficiency at the same time. The Convention (1923) was meant to solve the process using what technology was available at the time and, therefore, should not be assumed absolute and usable in the present social, economic and technological climate.

The process shows a lack of document traceability, meaning it can be difficult to trace old legalised documents, adding to the obvious difficulty in identifying legitimate (authenticated) documents by relying on the visual appearance alone. The process of document legalisation currently relies solely on the person's ability to identify forgery; it relies on the visual appearance of the document and signatures, and assumes that a signatory's signature is consistent each time they sign. This may not always be the case.

While we are experiencing huge change in both social and business processes, and since the process was established solely to deal with social and business activities, it is quite apparent that a change to the legalisation process is required. The use of an outdated method for protecting and recording documents should be revisited to identify the reasoning behind it and to verify the need to change, as set out in this document.

It is, therefore, wise to think that change is inevitable and that the current process is outdated and needs change. The process of change that some countries might have already started can always be treated as an experiment to evaluate the method and process of change.

The next Chapter details the research approach and methodology. The method particularly focuses on the combination of social reality and technological input.

Chapter Three

“A research method is a strategy of inquiry which moves from the underlying philosophical assumptions to research design and data collection. The choice of research method influences the way in which the researcher collects data. Specific research methods also imply different skills, assumptions and research practices.”

[Myers, 1997, p.5]

3 Research Approach & Methodology

Conducting any research requires the collection of data. This refers to the knowledge of empirical facts about the physical world, but this knowledge can be through perception. It is this perceptual experience that needs to be justified. In other words, the knowledge that is gathered (which may involve experiments) still requires some reasoning, as data must be analysed and synthesised before this knowledge can be assumed to be true. Kaplan (1999, p.90) argues that "*Values play a part not only in choosing problems but also in choosing patterns of enquiry into them [and bias] is effectively minimized only by making values explicit*".

While philosophy in epistemology investigates the knowledge based on the question "What is knowledge?", research methodology deals with the validity of knowledge. Methodology is the study of methods that accumulate knowledge.

Methodology thereafter relies on the epistemology of knowledge modified to justify knowledge validity. In other words, the method used in research usually provides the justification and evaluation for using appropriate methods.

Data is the product of methods used to acquire knowledge. The data is not immune from subjective biases and, therefore, requires analysis and synthesis to form new knowledge that is coherent and reliable.

The choice of an appropriate method for conducting research impacts on the accuracy of final conclusions. Hence the methodology plays an important part in validating and analysing research data. The data produced by the research, therefore, is the product of the methods used. This is why methodology in research varies according to the field and type of subject studied. There are many methods that can be used for conducting research. Most discussion in this field focuses on the divide between qualitative and quantitative methods.

However, before exploring the methodology that can be used for any research, there are other factors that may impact on the methodology used. These factors form the pillars that support and establish credibility and reliability of research.

3.1 The Four Pillars

There are four elements that need to be addressed in any research. They can be described as the pillars (should the research be successful and prove legitimate) and are: the researcher, the stakeholders, the subject and the research methodology. These are the main elements that have the largest impact on the research results. Hence, before determining which research methods should be used, an informative analysis of the four pillars must be addressed.

3.1.1 The Researcher

"Therefore, the assumptions are functioning as a kind of observer, when we observe that we forget that, and we are looking without taking that into account. But this 'observer' profoundly affects what it is observing, and is also affected by what it is observing —there is really very little separation between them".

[Bohm, D. 1996, p.69]

One of the unique characteristics of human beings is their ability to apprehend reality through a process of analysing and synthesising observable phenomena. It is this characteristic (based on the human mind) that makes humans unique in extending knowledge. It is the ability to organise perceptual information into concepts.

The assumption that there is little separation between the 'observer' and what is 'being observed' cannot generally be assumed, nor should this statement be assumed absolute. It is true that the researcher (and especially the insider researcher) may be affected by what is observed and vice versa. Thus there is a need to limit the effect through the use of research tools. The dual personality the insider researcher experiences is another difficult factor that the insider researcher should always be aware of.

The credibility of a researcher, particularly an insider researcher, is especially important because their everyday work and their routine and/ or emotions can have an effect on the research conducted. The researcher needs to seek the truth (reality) and that truth is independent on the researcher. As Hammersley (1992, p.43) defines, "*the idea that there is a reality independent of the researcher whose nature can be known and that the aim of research is to produce accounts that correspond to that reality*". At an ontology level this represents the realist's view.

The insider researcher may have an interest in and/ or be emotionally influenced by the future of the project, resulting in a biased conclusion. The risk of such influences will not only affect the research outcome (due to preconceived thoughts) but will also impact on the work of the company, depending on the researcher's role. Adding the intrinsic biases of an insider researcher may impact on the results and conclusion, due to the perception that may extend to the data's interpretation. Thus it can be concluded that the researcher's (especially the insider researcher) position significantly affects the relationship between the researcher and what is being researched.

Undertaking research in a known environment can be an advantage as the researcher is already familiar with the work and its requirements. On the other hand, being an insider researcher with prior knowledge of the underlying intrinsic biases may result in preconceived ideas and, therefore, create disadvantages.

An effective insider researcher needs extensive self-awareness and knowledge about specific methodological strategies. The researcher (being aware of the biases explained above) should extensively apply a bird's eye view of the organisation – both with and without the researcher's presence. This is one way of recognising the company and its work without interference.

After all, insider researchers are special and more effective people due to their position and their knowledge of the organisation which, in turn, will have an impact which benefits the organisation. The suggestions, recommendations and conclusions which result from an insider researcher's work will impact on decision making, planning and implementation.

It is a known advantage that insider researchers are more focused than outsider researchers (Robson, 2002, p.382). On the other hand, there are some disadvantages, as explained earlier. University-based researchers (outsider researchers) also have a place in industrial practice. Each is complimentary to the other.

Both types of researcher are involved in collecting and analysing data, the common outcome of all researchers. However, they may bring different knowledge which, in fact, is a new form of data. Both are equally valuable.

Researchers may not only be influenced by the research or what is observed. Researchers may also be influenced by the stakeholders, especially in complex environments such as the relationship between organisations and customers and/ or staff. In addition, the process of work may be affected by the outcome of the project's conclusions. Stakeholders may play a role in deciding which research method should be used.

It is, therefore, important to emphasise accountability and self-awareness by reflecting the position of the researcher and his role in the company. Gouldner (1970, p.25) points out that "*The sociologist's task today is not only to see people as they see themselves, nor to see themselves as others see them; but it is also to see themselves as they see other people*". It is thus arguable that the conceivable thought and ideas are not necessarily true, and that the insider researcher may need to look at himself as an outsider and to look at the organisation both with and without his role.

3.1.2 Stakeholders

The current climate of business and the awareness of the global impact of business activity at the social level increase the concern of stakeholders. It is, therefore, important to communicate with stakeholders, and especially decision makers.

Stakeholders can be grouped according to their positions (roles), such as decision makers, managers and employees, not to forget the users of the project such as the public, especially when the project uses data which is considered the property of the user's "data subjects".

Each of these groups of stakeholders may have different important elements in research; data triangulation may involve multiple sources of information/ data. It is, therefore, important to categorise groups/ stakeholders to evaluate the perception and thoughts of each group.

It is also important to use a suitable approach to collect data for each type of group, as conducting in-depth interviews may not be possible for all groups. To gain insight into the stakeholders' perceptions and their acceptance of the objectives of the project needs another point of view. A triangulation approach may be used to find out whether the

outcomes of all groups agree or disagree. Thus using different groups with a different level (role) may enhance the weight of evidence identifying different points of view as each group may see it. This is apparent in the findings of Chapter 5, section 5.2.2: The Use of Stamps, where it was difficult to determine the reasons for stamp usage. However, by triangulating data by using different approaches such as experiments, archives, questionnaires and interviews, I concluded that stamps are merely a method of collecting data.

Grouping stakeholders will greatly enhance the evidence as managers (being familiar with the processes involved) may require a more detailed interview than that needed for the users. Yet decision makers may be more interested in statistical evidence and thus require a different approach in conducting interviews. As Lyytinen (1988, p.45) stated, “*an IS failure [is] a gap between stakeholder’s expectations expressed in some ideal or standard and the actual performance*”. A different point of view has been addressed by Bussen and Myers (1997) who state that “*failure is a judgment and not necessarily an objective state. For instance some stakeholders may affect dissatisfaction as part of a political game*”. This entails the researcher investigating the roles of stakeholder groups that may underpin social conflicts and political interests.

3.1.2.1 Stakeholders & Status

A project of this size and complexity needs to be addressed at a high level of personnel. The project touches many areas in the organisation, with the financial element of the project basically being the responsibility of the Ministry of Foreign Affairs (MOFA). However, a clear protocol that is already in practice needs to be adhered to between the MOFA and the Ministry of Finance & Industry (MOFI). The protocol used is an old method of accounting that dates back in history due to the lack of communication in the past. The current procedure is for the MOFI to issue stamps of different values which are used in legalisation. This process is one of the main focal points in the project.

The current process does not offer any report nor can the MOFI access any information during legalisation. The only method that is in practice is the ability to calculate the income based on the value of stamps used in legalisation. In addition there are many legalised documents issued on a *gratis* basis which the MOFI will not account

for. Thus the method that the MOFI uses to track the financial status is not accurate, whereas the new process will provide an up-to-date informative financial status on a daily (on-line) basis.

In other words, the MOFA is assumed to be a point of sale for these stamps. The new process will replace the stamps with another form of identification that will be digitally identifiable and will provide a direct financial transaction record for the MOFI.

It is this process that needs to be accepted and adhered to between both parties; the change from the use of stamps (similar to those used in the post office) to the digitally signed artefact. I have already discussed these issues and found that change is possible, with the exception of the style and the arrangement between the parties. In an interview in London, March 2009, the Chargé d'Affaires acknowledged that *“only after a full picture of the process and the outcome is clear, then we can arrange for an agreement between the Ministry of Foreign Affairs (the Consulate Department) and the Ministry of Finance & Industry”*. He added that *“the legalisation authentication is not the use of stamps, the stamps are for the purpose of finance that the Ministry of Finance & Industry need to account for the income of the government”*.

When asked “Do you think it is feasible to change these stamps and would the MOFI accept any changes?” he replied *“Yes, the only reason that we use these stamps is for the Ministry of Finance & Industry to calculate the legalisation income. If they issue another stamp, we will use it (as it happened frequently) so the changes you are asking for are merely a shape as far as MOFI is concerned”*. The Consulate Director in the MOFA is known to be the main stakeholder of the final product as a process and artefact, whereas the MOFI requires some form of account reconsolidation of income. This will be produced by the new Document Legalisation.

Stakeholders can be grouped according to their role: Consulate Directors, Chargés d'Affaires and/ or Consuls are the main stakeholders and/ or have influence on decision makers. Therefore, the assumption in my data collection – to take special consideration of this group – was carefully made.

Local government departments may only be informed of the changes in the process of implementation in the form of a new legalisation sample and this may involve a meeting at directorate level. Currently, in the event of changes, MOFA release a memorandum to

local government departments describing the changes. However, because the new changes will be digitally identified the plan may include access to the Legalisation database, which should be available to all. Access to the Legalisation database will be restricted to read-only. This should be sufficient enough to enquire of a document's status. The style and application type (and/ or web link to the system) may be incorporated in the MOFA website.

The system will automatically inherit the characteristics of the internet. One of these characteristics is the global access which will help in the implementation at a global level (i.e. all Embassies/ Consulates). The new process will ease the process and clarify the method of authentication. Visual authentication is the current practice whereby the new process will add the use of digital identification, i.e. the use of the Legalisation database can ease this process. The document will be recorded in a database through which any employee can check if the document has been legalised. This is also a double security check (double entry); a document can still be visually authenticated but a record of this legalisation can also be accessed online.

Other governments will be informed of the changes by a form of memorandum together with a new sample of Document Legalisation, including a seminar for government representatives (Embassies/ Consulates) with a sample of the artefact and the method of authentication. This process is used in diplomatic protocols, e.g. any change to British passports. The same process is used when informing other governments of changes.

In summary, the opinion of stakeholders at the level of directors and experts should be one of the priorities in this research, adding to the necessary review that is needed before and after the conclusion of the research (as seen in Chapter 7 and Appendix E). Acceptance at an implementation stage can vary between acceptance with caution and allowing implementation.

3.1.3 The Subject

The subject of the research is one of most important elements in determining the research methodology; it is, after all, the main focus of the research. It is, therefore, important to discuss the subject of the research and the objectives to give an insight into the problem that will be explored and discussed in this project.

A rational introduction to the subject, shown in the Section 1, reflects the complexity of the process and the need to change the process in the most modern fashion and using the best available technology.

The process described was not common to all countries; I would like to emphasise that this process is dedicated to the Arab world in general, specifically the Gulf countries. Other countries, such as the countries that signed up to The Hague Convention (1961)¹³, do not use the same process and as such this research project will not discuss this area of document legalisation.

Countries signed up to The Hague Convention (1961), such as those in the European Community and the United States of America (USA), have different processes and, with some documents, may not require document legalisation.

3.1.3.1 Project Complexity

The current process of Document Legalisation has been used for many years and a change in this process may take some time. There are many possible pitfalls that the programme may encounter, one of which is the change to a process that has not yet been established in any other area of the world, so there are no other occurrences for comparison. A clear and informative document explaining the project – a Specific, Measurable, Achievable, Realistic and Time Limit (SMART) description of the project – will solve any conflict.

I have already indicated that research in this subject is new with a lack of raw data for evaluation, therefore, quantifying the expected benefits with a formal approach will

¹³ Concluded 5 October, 1961 (Entered into force 24 January, 1965).

prove difficult. The analysis of an extensive data collection to synthesise and form a solid background for a conclusion is paramount.

The data type and source must be from experienced personnel. One source of data will be interviews with managers and/ or directors. Other sources of data may take the form of questionnaires and/ or interviews with employees. In order to quantify and evaluate a complex process such as this external data is required. This should be collected from a group of a similar level, but from other organisations.

After a brief interview with the Chargé d'Affaires for the United Arab Emirates in London, and explaining the project and the possible outcome, he commented: *“The current process is so old that it may be difficult to convince some heads of departments in the UAE to make a change to this new technological system but, when they see it and the benefits are clearly seen, any dissent will soon evaporate.”*. This is certainly what I expected and I have endeavoured to include some interviews and/ or presentations with directors.

The current process is known to be ageing and in need of modernisation. This is reflected in the comment by the Chargé d'Affaires in London, stating *“Those of us here in London and those already made aware of it in the UAE are looking forward to seeing the final result and having it up and running as soon as possible”*.

The Document Legalisation process must have a form of backup, i.e. authenticating documents can be done without the use of computers. This option is vital due to the fact that a document may be used by a foreign government's agent who may not use computers and/ or a capable infrastructure. The new Document Legalisation process, therefore, needs to be visually authenticated with embedded security marks. This shall not be the only security check, but it should provide enough measures to authenticate documents.

In view of the decision to implement the system, the Consulate Director in MOFA will negotiate the new process to higher decision makers such as the MOFA where a decision may take the form of acceptance or further discussion at ministerial level. The researcher's role, at this stage, would be to clarify any unclear area of concern.

3.1.3.2 Project Outcome & Risk

I will now discuss the main potential security pitfalls; some are easy to manage whereas others require more attention. Opening an organisation's private data network up to the internet automatically exposes the network to the threats that inherent with the internet, some of which are known to the IT staff such as viruses, Trojans and hackers. All of these problems form part of the package of the huge cloud known as "the internet".

Security is another critical issue and complicates matters by adding extra weight onto the network through the addition of network ports and addresses. This is obviously an issue that is addressed in any data network and, hence, I included this as no more than a reminder, with an extra caution that the network is now time-critical and availability is paramount.

When considering the use of a network, and especially when using the internet, you must take into account that you inherit both the good and the bad of that IP network. Denial of Service (DoS) is one of the known forms of attack in the world of IP networks. This is not exclusively an IP network phenomenon. A Legacy Network, such as a telephony network, is also susceptible to DoS¹⁴. This is a simple target for denial of service. What associates this type of attack in particular with an IP network is the automation of the attack. It has the ability to flood the network with unwanted traffic (using software called internet worms) which will ultimately bring the service to a standstill. As such, critical system availability is paramount.

The new proposed solution may require a network infrastructure that might be absent in some branches around the world. It is, therefore, necessary to study backup communication and database replication. A further in-depth discussion about security and risk can be found in Chapter 5.

¹⁴ If a person repeatedly dials a number it will stop the victim from receiving or placing a phone call.

3.1.4 Methodology

“But finding the material for learning within experience is only the first step. The next step is the progressive development of what is already experienced into a fuller and richer and also more organized form”

[Dewey, J. 1997, p.87]

Producing an effective research design is likely to be one of the most difficult and eminently useful tasks in this project. An effective research design links abstract and stylised concepts and questions the empirical world's complexities and challenges. A research design must be both specific and highly flexible. It must be expansive enough to adapt to complexities while still pointing towards relevant data. Because of the position of a work-based researcher, intrinsic biases may affect the method of research.

A qualitative approach can be categorised into three distinct paradigms, according to Orlikowski and Baroudi (1991). They established that (based on the underlying research epistemology) there are three categories: positivist, interpretive and critical. However, positivist is generally based on the assumption that reality is objectively given. It is, therefore, based on the assumption that reality is measurable and that it is independent of research. In contrast, interpretivists do not account for dependency and/ or independency between the phenomena studied, but focus on the complexity of human sense making. Terence (1998, p.8) stated *“But coherence within common beliefs does not seem to be a ground for claiming to have found objective principles”*. Interpretivists, therefore, think that knowledge is constructed through language, consciousness and shared meanings.

Looking at the basis of what is common belief in a human sense can be ambiguous, especially when considering the statement “common sense”/ “common belief”. Terence (1998) argues that ‘*endoxos*’ is *“the views of fairly reflective people after some reflection”*. It is embedded in the words and interpretation.

The third group is that of the critical researcher, who assumes that the social reality is historically composed and that it is replicated by people. This assumption is apparent in critical research which focuses on the conflicts and contradictions in modern society or the elimination of the causes of separation and supremacy.

This guides us to the method of looking at the collected data and the data should be analysed and synthesised to make it more coherent and reliable.

In a study conducted by Orlikowski and Baroudi (1991) it was found that 96.8% of research in IT uses the positivist approach, of which 23.9% is descriptive and 72.9% is theoretically grounded, whereas 3.2% of studies are interpretive and none are critical. Table 3-1 shows the result of the study:

Epistemology	Frequency	Percentage
Positivist	150	96.8%
<i>“Descriptive”</i>	37	23.9%
Theoretically Grounded	113	72.9%
Interpretive	5	3.2
Critical	0	0

Table 3-1: Articles Classified by Epistemology. Source: Orlikowski & Baroudi (1991)

This shows the underlying philosophical assumptions by researchers in IT fields and reflects the dominance of positivists’ views of IT research, which is rooted in logical positivism.

Likewise, in research conducted in the USA by Pratt et al. (2005) it was established that *“Our analysis indicates that 74% of the most cited articles are positivist and 26% are interpretivist.”* This guides us to believe the epistemological assumptions of the researcher in IT can be influenced by the positivist approach. Table 3-2 shows the result in numerical format:

Theoretical Perspective	Frequency	Percentage
Positivism	37	74%
Interpretivism	13	26%
Critical Theory	0	0%
Total	50	100%

Table 3-2: Articles Classified by Epistemology. Source: Pratt et al. (2005)

This indicates the rise of interpretivist assumptions in IT; the research conducted in 1991 concluded that 3.2% of research in IT is interpretivist whereas the research from 2005 concluded that 26% of research is interpretivist. This amounts to a rise of 22.8%, however, there was no change in the level of critical research.

Both researchers, on the other hand, based their findings on a very similar assumption detailed in Table 3-3. The rise in interpretivist research was not surprising considering the criteria for project failure in IT, which is detailed in Section 3.5 (Research in Information Technology):

Positivist	Interpretivist	Critical Theory
<ul style="list-style-type: none"> ● Formal Propositions ● Quantifiable Experiments/ Quantifiable ● Questionnaires ● Goal of Predicting or Explaining Causal Relationships 	<ul style="list-style-type: none"> ● Discussion of Observation and Meaning ● Ethnography/ Interview/ Observation ● Grounded Theory Development 	<ul style="list-style-type: none"> ● Logical Challenges to the Status Quo ● Challenges to Generally Accepted Assumptions ● A call for change within the IS research community

Table 3-3: Classification Criteria of Theoretical Perspectives . Source: Pratt et al (2005)

The shift of researcher in the assumption of an epistemology may be due to the impact of the project failure in IT Industry in earlier years. I, therefore, believe that a mixed methodology should be used for this type of project, where historical composition of knowledge has an impact on the assumption and belief of users in the field.

3.2 Data Type & Analysis

Considering that the project explores a very sensitive area in the organisation, and one of major change to the organisation's business process, the authenticity of data must be given a high priority. Therefore, an online survey may not always be a legitimate approach. A paper survey may well fit the purpose but, on the other hand, a detailed interview may also be appropriate.

Qualitative research involves the analysis of data that may be derived from interviews, objects (artefacts), fieldwork and archival research whereas quantitative research involves the analysis of numerical data. Considering the strengths and weaknesses of both types of research is recommended, especially in the social sciences.

To collect and analyse data for both qualitative and quantitative approaches, the data needs to be accurate and from a sound source. Data may well need to be cross-checked and should be analysed by multiple methods. The data should be validated and can be collected from multiple sources, e.g. from technical white papers, IT newspapers, surveys,

textbooks and case studies. Most importantly, in case of data mismatch, an experiment should be performed to prove and validate the data.

Using a mixed method design can be advantageous, especially when using qualitative and quantitative research to interpret data. Building a project based on the strengths of both quantitative and qualitative research methods should build a complete picture of a research problem, rather than relying on the qualitative method alone. However, both quantitative and qualitative research methods are discrete.

It is, therefore, important to analyse the data using many different approaches such as content analysis, looking at the pattern, and analysing the meaning and frequency of occurrence of certain words etc. (Michelene, 1997; Matthew & Huberman, 1999).

An interview with some experts on this subject was essential to gain more of an in-depth recommendation as to how to triangulate the data using multiple sources of validated and professional information in order to interpret a single set of data. This was necessary to enrich the research and gain more credibility. The findings from these sources will secure the primary data, although they may give conflicting results. Thus cross-checking the data (using the triangulation method) will always result in even more accurate results and much informed and solid information.

In this sensitive part of an organisational project, the quality of data is very important as this will impact on the validity of data sources. Due to the nature of the project, decision makers and/ or anybody who has an influence on final decision-making must be considered. Carefully analysing and synthesising data from the research already carried out and reviews, using both qualitative and quantitative methods, will form the base of data triangulation. Data collected by questionnaires may be affected by some intrinsic factors and/ or the historical composition of knowledge due to the situation of this subject, as mentioned in Chapter 2. Hence at an epistemological level it is bound to the school of the critical researcher.

Therefore, a comparative approach of data collection by means of a questionnaire cannot be assumed to be absolute and correct. It is thus wise to revert to archives and books on this subject to determine the original assumption of the process. This still cannot determine and clarify the result due to assumptions made by critical researcher, as their knowledge may have changed in due course. Therefore, a positivist approach may address

this area of concern and an experiment may be need to be conducted to resolve the mismatch of data. This data can then be used as the background for making recommendations which will gauge the overall potential and commercial use of this project, as well as finding an appropriate design and implementation to secure a seamless convergence.

The above may seem to complicate the process of research, using mixed methods of data collection and at the same time mixing methodology at an epistemological level. The reason for this is apparent; as described in Chapter 2, very little research and documentation is available on a historical subject such as Document legalisation.

Collecting data from surveys, both internally at a managerial level or at the level of decision makers, and analysing the findings of existing surveys from industry provided a picture of awareness. After analysing this information together with the result of surveys from employees, I considered the findings and cross-checked them with the other findings from industry and that of our organisation.

The findings of the research recommend a method and will describe a tool to evaluate a new method (process) of document legalisation to be used as an alternative process to the currently used one. The research proposes a fully-fledged strategy for the organisation. The various elements will be distributed into system security, staff mobility and combined management. The relationship between relevant concepts and theories and the practical scenarios recommended in the research form a major part of the project.

The report will give recommendations to the organisation. I expect that this analysis will contribute to the future of the process strategy and will help in the design and implementation of the necessarily important equipment, even if implementation is not an immediate need. It will also focus on the ways and means of projecting future business processed between the head office and other branches (on one hand) and to other government departments.

I thus acknowledge that there is always a source of information to be discovered. Available sources of information must not be taken at their face value as marketing material may influence me. Therefore, it should only be considered as one source of information.

This does not mean that all marketing information is biased, but it should be rigorously tested and fully supported by evidence. Validating data is one problem for researchers, as is considering the sources of data and the nature of the evidence, especially in IT. Information in this field can be ambiguous, which may influence judgement.

My intention was to carry out a telephone and/ or interview survey of managerial level staff, which may be a qualitative approach. A paper survey would be suitable for a user level where a quantitative survey may best fit the survey. The main purpose of the survey was to sense the awareness and acceptance of implementing such technology.

An interview with some of the experts in this subject is essential to gain more of an in-depth recommendation and to triangulate the data using multiple sources of validated and professional information. This can enrich the research and make it more credible. I have also conducted some telephone interviews, some at managerial level, in the organisation.

3.2.1 Interviews & Schedule

Planning an interview was one of the researcher's perceptions. A plan is necessary to structure an interview in order to record and find the required data. A schedule can help guide me to complete an interview gracefully while keeping it informative and reliable.

After analysing the data required, I needed to list the issues and questions that should be covered. The interview should cover all the needs/ problems. The wording of the questions should be carefully phrased to avoid misinterpretation.

To achieve the best results from the interviews, I needed to avoid influencing the interviewee and to ensure that the respondent understood the questions put forward. The interviewer (researcher) should also pre-test the structure and make sure that the questions fit the goal of the research.

Considering the groups of stakeholders (depending on their role), the set of information required and the style of questions needs to be planned. Due to the nature of this subject, a decision-maker's views must be taken highly into account. However, the availability of such high ranking personnel cannot be assumed easy, therefore, a minimum of five interviewees should satisfy the needs. Open questions may well suit the managers/

directors to give more in-depth responses. Answers such as yes/ no may not provide sufficient information for many questions. Hence creating a flowchart style of questionnaire may be most appropriate rather than a set of questions and answers.

It is as important to comprehend the interpretation of phrases and thoughts of the interviewee as it is to analyse them. However, the interviewer needs to access the data afterwards in the same format and phrases as it was received. This guides us to the question of whether the interviewer agrees to be recorded. If not, a written transcript needs to be recorded accurately and not the interviewer's interpretation.

The interviewer's perception of the words can be misguided as language description is analogous to the famous duck/ rabbit picture. To elaborate, Figure 3-1 shows a picture which I assume the reader will think is a duck, whereas the next page shows the same picture but the reader's perception changes to see it as a rabbit (Figure 3-2).

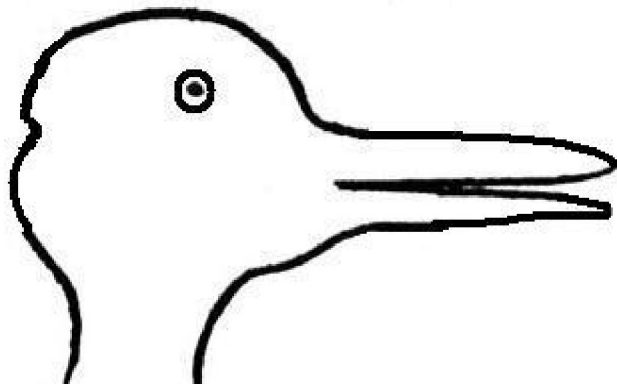


Figure 3-1: Duck/Rabbit (modified). Source: Chase, B. Wrenn (2009)

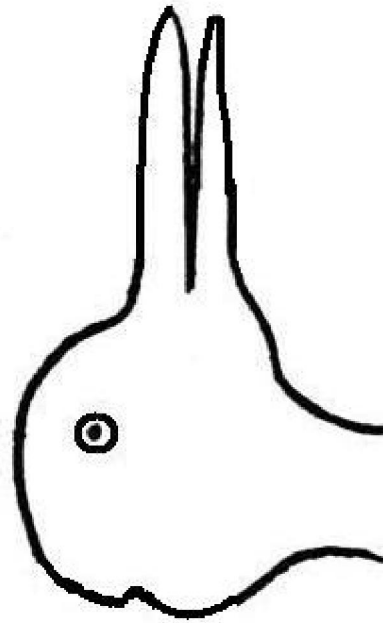


Figure 3-2: Duck /Rabbit (modified). Source: Chase, B. Wrenn (2009)

It is, therefore, necessary to reflect on the interview at a later stage when a full picture of the interview has been completed and hence the analysis of the interview can be more accurate and legitimate. This strategy was routinely used in this project.

The intention thus was to conduct a semi-structured interview, with a special consideration for senior officers for whom an interview would be conducted and opinions studied with respect to their experience in the fields. A returning interview and/ or presentation of a review of the findings will be highly appreciated and will gauge their acceptance of the project (new process). Details of how the interview was conducted are given in Chapter 4.

3.2.2 Triangulation

“The literature in qualitative research methods identifies triangulation as an important design consideration in establishing credibility. This refers to gathering information from several perspectives through different methodologies. Triangulation can entail the use of a variety of data sources, several investigators, multiple interpretations of a set of data, and/or the use of multiple methods to study a problem.”

[Guba & Lincoln, 1999, p.147]

The aim of this process was to strengthen the research findings and to overcome any biases I may possess. The data collected came from different directions. Another side of the survey was sourced from the employees within the organisation, and the final source of data came from the survey that took the form of interviews with and papers obtained from the decision makers and/ or people who had influence on the decision makers.

Triangulation is an important element in any qualitative research method. Triangulation gives credibility and reliability to the data collected and conclusions made. Triangulation can take different forms and use different methods; for example, data triangulation involves time, space and members of many types of groups of stakeholders.

Triangulation may also involve the investigator by involving different observers rather than relying on just one. This type of triangulation process requires special attention. The observer needs to have an appropriate level of understanding for the area of work that the project is investigating.

Yet at this level of triangulation, the process neglected the outsider researcher. As a result of the above, triangulation was assumed to be for an insider – the researcher and the observer are both in the same profession. It is, therefore, even better to involve other observers who can look at the problem from a different perspective; such observers may be from different disciplines.

The reality of triangulation, especially data triangulation, is not as clear as it seems because, although it certainly fits the area of transfer of knowledge, information that can be useful in one type of research may not be as useful in another. It is important to emphasise that, even though using other research findings to triangulate with current research may be of benefit, the methodology of other research and areas of research must be considered.

After all, triangulating data from multiple research findings needs skill and time. It is complex as it involves many variables such as the relevance of knowledge and whether the recognition of this knowledge is relevant to the situation, or even if this knowledge will fit into other situations. It is also important to note that some of the learned skills may be mixed and matched in accordance to the needs. This recognises that knowledge is not a piece of information that can be fitted anywhere.

The data collected in this subject from interviews and/ or questionnaires seems to be bound with other collected data. It is a perfect example of the critical researcher due to the assumption that knowledge is replicated by people; knowledge collected, whether by interviews or questionnaires, should be assumed to be correct and immune, and hence this data can be triangulated with other sources such as archives with the knowledge that the process was inherited.

I, therefore, assume that triangulation should be used for both method and methodology, and hence will use the assumption at an epistemological level rather than relying on methods alone. I will triangulate using data from surveys, interviews (both quantitative and qualitative methods), experimental data to clarify the mismatch of data and archives (conventions), thus completing the needs and requirements for triangulation in both methods and methodology. The reason for this is the complexity and the historical composition of knowledge that has an impact on the subject.

Chapter 5 shows an example of how the findings and data triangulation can lead to misperception. Thus the triangulation of data acquired by archives, experiments, interview data and questionnaires should strengthen and clarify findings. Chapter 4 (Data Analysis and Triangulation Dilemma) gives an example of how data triangulation can resolve a conflict of data.

3.3 Credibility & Reliability

“Everywhere, our knowledge is incomplete and problems are waiting to be solved... the role of research is to provide a method for obtaining those answers by inquiringly studying the evidence within the parameters of the scientific method.”

[Leedy, P. 1997, p.3]

Establishing triangulation alone may not solve the problem as sources of data should also be credible and reliable. One of the basic questions to be asked by policy makers is about reliability. Janesick (2000, p.393) argues that "*validity in qualitative research has to do with description and explanation and whether or not the explanation fits the description*". Nevertheless, the authenticity of data sources should be sound and known to the policy makers, hence providing additional value in terms of research credibility.

Data sources are another difficult area that researchers may encounter. It is important to choose data from sound reliable sources known to be scientifically authenticated, yet the ethical dilemma that the researcher is involved in is paramount. Research tools such as triangulation are known to be very effective. Patton (2002, p.247) acknowledges that "*triangulation strengthens a study by combining methods. This can mean using several kinds of methods or data, including using both quantitative and qualitative approaches*". Considering the subject studied in this project (Document Legalisation) and the sensitivity, plus the addition of the historical background, the researcher thought that a combined method (mixed method) needed to be used.

Interviewing senior personnel is so important in this type of project. However, again some of the high ranking officers may give a review which reflects their experience and knowledge of the subject, and hence the need for reviews and suggestion cannot be ignored. As such I conducted two interviews with senior officers by the end of this project. I also made a presentation, the result of which is given in Appendix E (Reviews and Comments).

3.4 Ethical Considerations

As this research entailed collecting data by means of questionnaires and/ or interviews I needed to consider many aspects such as confidentiality, anonymity and informed consent of the participants. In this research special consideration had to be used due to the fact that some of the data acquired by this researcher was obtained from government personnel.

3.4.1 Ethics & Research in Government

Working in a diplomatic organisation, an Embassy, is like working for a branch of a company that spans around the world. The Ministry of Foreign Affairs (headquarters) needs constant communication with all its branches (Embassies) worldwide. In turn, the nature of the diplomatic mission's employee is very mobile and a diplomat may change place and/ or position frequently. Therefore, staff mobility is of concern.

Considerations the researcher needs to be aware of and adhere to are:

Ethical consideration of participation: The perception of a participant in an interview and/ or questionnaire needs to be addressed at an ethical level. To gain informed consent it, therefore, needs to be clear that the questionnaire/ interview is not compulsory, nor will this affect the work status of the participant.

It is a known dilemma that employees may expect that the research will lead to policy changes or the acquisition of information from which they might benefit/ lose out. This may lead to misleading information being given.

Confidentiality: A clear statement of confidentiality should always be available before beginning an interview and it should state that an interviewee may opt out of being named for the purpose of assuring the participant's confidentiality. I avoided naming the participants but used coding to eliminate mismatched references.

There will always be some tension surrounding the confidence and understanding of the interviewer's / interviewee's interaction and the participants' ability to control disclosure.

In a report prepared for the Government Social Research Unit (GSR), it was established that a wider set of issues emerged based on people's own experience. Table 3-4 shows the findings by Graham et al. (2007):

Before the interview	During the interview	After the interview
Unpressurised decision making about taking part	Being able to exercise the right not to answer a question or to say more than they want to	Right to privacy and anonymity respected in storage, access and reporting of the research
Research is independent and legitimate	An unpressurised pace, time to think	Unbiased and accurate research and reporting
Knowing why they were selected to be approached	Feeling comfortable and at ease, valued and respected, not intimidated or judged	Opportunity for feedback on findings and use
Clear and worthwhile objective, purpose and intended use	Opportunity for self-expression and for own views to be recorded	Use is actually made of the research for wider social benefit
Knowing what to expect and being able to prepare especially in terms of the coverage and questioning style	Questions are relevant, not repetitive, clear	
Openness, honesty and correcting any misunderstandings	Left without negative feelings about participation	

Table 3-4: People's Own Experiences of their Interview. Source: Graham et al. (2007)

Regarding confidentiality from the participants' perceptions, Graham et al. (2007) acknowledged that: *"People seemed generally to accept what they had been told about confidentiality, although some did emphasise that this was a matter of trust on their part. The manner of the interviewer and impressions of the researcher's approach overall made people feel more secure in having this trust"*. This demonstrates the role of the interviewer in establishing trust.

An interesting observation in the research of Graham et al. (2007) is that *"A particularly important issue for people was the extent to which the interview gave scope for self-expression. This reflected the fact that some people participated because they wanted to have their say or express their views. People who took part in qualitative interviews valued the chance to explain, to say as much as they wanted and to give an in-depth answer. Some who took part in surveys felt they too had had this chance, but there was also frustration with the use of pre-selected response options and show cards"*. This

can be seen as a good element of the interview. The interviewee will, by far, give a more in-depth answer than that which can be obtained from pre-selected answers such as with a questionnaire.

The statements in the questionnaire that I distributed clearly stated that: *“The purpose of this questionnaire is to help evaluate the need to introduce a new method of legalisation services, The research will help improve the business' workflow”*, and the aim and use of data was stated as: *“The aim is to eventually present the research (along with data collected in other parts of the study) to the Ministry of Foreign Affairs in the appropriate contexts (academic and professional). The researcher will refrain from using data that the participant considers sensitive - no marks or indications will be assigned to identify the participant”*. As for the anonymity of participants, I clearly stated that: *“All information acquired will be treated as confidential. The questionnaire is only a reference to the data collected”*.

To ensure the anonymity of participants I designed the questionnaire to only hold a serialised number rather than the name of the participants. This will establish trust between the researcher and respondent.

3.5 Research in Information Technology

While information technology plays the most important role in any modern organisation, research in this field needs to be addressed and discussed, specifically as IT impacts in more than one area of the scientific research group.

Working in complex environments where the internet is assumed to be a medium for the gathering of multiple cultures while adhering to rules of multiple countries in relation to personal data protection needs special attention from researchers in the IT field. Research in this area needs to be accurate due to its possible consequences and effects, not only on the organisation as the main area to which the research is directed but also because it may affect a wide range of areas such as the public's and the company's future thereafter.

IT is especially in question as reports show that there is a huge failure rate for IT projects. A study across eight countries by Dynamic Markets Limited (Aug. 2007) found

that 62% of IT projects failed to meet their schedules and 41% failed to deliver the expected Return on Investment (ROI). Research can be the most important factor to derive qualitative results out of projects. It is understood that there are many variables that contribute to a project failure, some of which are related to project management and/ or their technical capabilities. There are also other factors that should be considered, such as project research, which should be the first element that contributes to the failure or success of a project.

Many reports investigating IT project failures start at the stage of implementation. It is for this apparent reason that the project cannot be evaluated until the project has been implemented. The report by Dynamic Markets Limited (2007) stated that "*All organisations in the sample have encountered at least one of these problems when working on implementing new IT projects*". It is true that projects can only be assumed to be a success or failure after implementation, but the research into the project should also be considered. After all, the implementation stage should follow the recommendations and considerations of the research. Figure 3-3 shows the category of project failure:

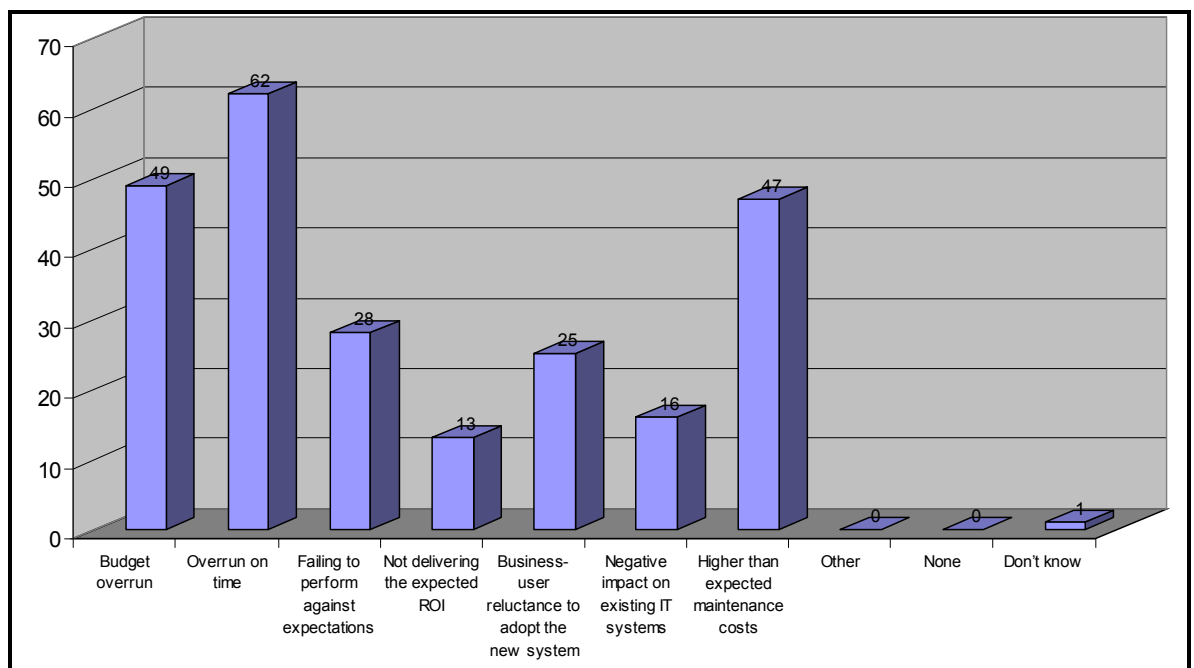


Figure 3-3: Category of Project Failure. Source: Dynamic Markets Limited (2007)

Considering the category 'Business-user reluctance to adopt the new system', the questionnaire shows the absence of research considered at the user level and political/cultural behaviour. There will always be an assumption of the judgmental element which

is reflected by Bussen and Myers (1997) who state that “*failure is a judgment and not necessarily an objective state. For instance some stakeholders may affect dissatisfaction as part of a political game*”. This is why establishing and sensing the users’/ stakeholders’ thoughts and knowledge is important when conducting research, in order to underpin their social conflicts and political interests.

Noticeably, 25% of IT managers believe that the reason for an IT project’s failure is due to “*Business-user reluctance to adopt the new system*”. This guides us to consider two paradigms in IT research. One is to explain/ predict the human phenomena surrounding the project; the other paradigm should consider the IT implementation and management.

The project’s research, therefore, needs to study the perceived usefulness of the IT artefact that is to be researched and implemented in any organisation from the stakeholders’/ users’ point of view. After all, the research intends to evaluate and solve identified problems in the organisation, yet organisations are composed of people and the work process where IT is a tool that can enhance the business process and employees productivity.

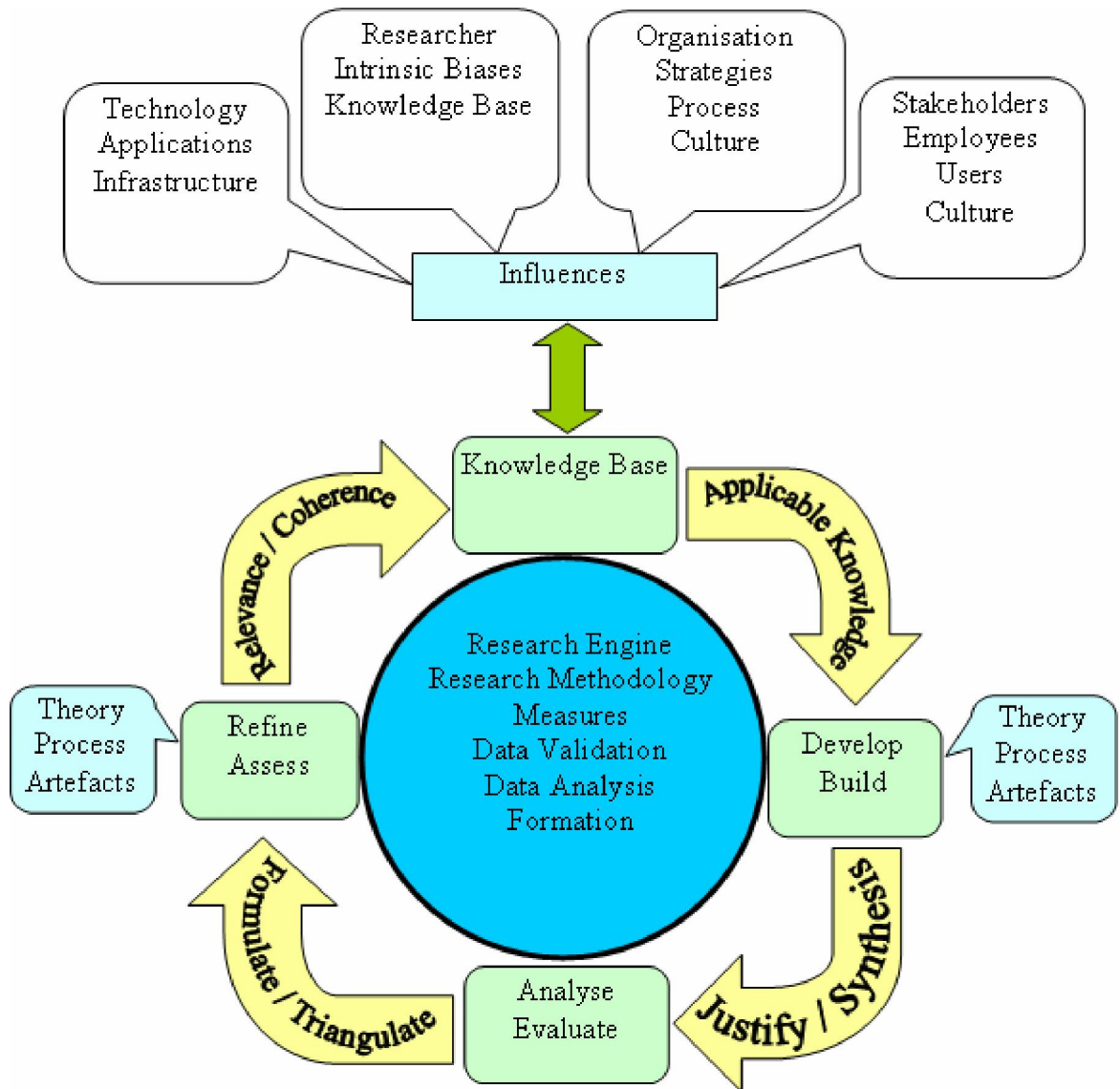
This is an indication that shows the effect of research on industry and the consequences of research failure to deliver a reality in conclusions and recommendations, before the implementation stage even begins. The knowledge base of the researcher is assumed to be the main element of the research while the influences and the information itself needs to be relevant to the research in order to build a theory.

The researcher needs to justify, synthesise and evaluate knowledge. This process may well need to be refined and assessed to meet the requirements of the project and further improve the knowledge base. In the research process, knowledge may form a cycle by which knowledge is refined while collecting data, analysing data and synthesising the findings to form a more coherent knowledge.

The validity of the study can only be established whilst measuring the data and findings, regardless of whether it counts in the area of the research. Leedy (1997, p.32) argues that “*Validity is concerned with the soundness, the effectiveness, of the measuring instrument*”. Hence I argue in this topic for the use of the Four Pillars. Due to the complicated nature of the data acquired by means of interviews or questionnaire, which may not represent the reality when accounting for the assumptions made by the critical

researcher, it is necessary to draw a research cycle process to justify the assumption of the Four Pillars and to eliminate data that can be historically replicated. Figure 3-4 shows the process of the research cycle:

Figure 3-4: Research Cycle



3.6 Summary

To summarise, the methodology used in this research needs to incorporate both qualitative and quantitative methods. The very nature of knowledge in this topic has been accumulated historically, which reflects the natural social reality.

For this reason, a survey and interview may not be sufficient to give a complete picture of the subject. A review of the history of the subject should, therefore, reflect the critical researcher's assumption that knowledge is historically composed and that knowledge is replicated by people.

It is, therefore, important to add the positivist approach by conducting experiments to provide solid reasons for which coherent knowledge should be added. The common belief that may be assumed is that one's perception of reality may not be true – in some instances the human sense can be ambiguous. Overall, the research in this subject at an epistemological level combines the three dominant schools.

It may be very difficult, knowing that this subject had not been explored in depth, to collect data and provide sufficient coherent information to form a conclusion; relying on interviews and/ or surveys alone might not fulfil the data requirement. It is, therefore, important to dig down through history and find reasons for every aspect of the routine taken to form the document legalisation process, adding experiments to some routines which reflect the positivist approach (which should be add-on data), and hence providing solid data on which to base a conclusion.

To summarise, I will use a mixed method to collect and analyse data using the following approach:

- Interviews with senior staff;
- Surveys of employees working in the field of document legalisation;
- Historical literature to find reasons for every step in document legalisation
- Experimental processes to verify document legalisation literature.

The next chapter discusses the activity in conducting this project. The difficulty in finding previous research in this field, and compensating for this by researching archives to

find reasoning for the steps taken in the legalisation process, dominated much of my time and effort. Nevertheless, carrying out a survey and interviews enabled me to gain a more comprehensive understanding of the document legalisation process. Furthermore, this enabled me to triangulate the data.

Chapter Four

Distributing and collecting the questionnaire responses is the first step. The analysis and synthesis of data from different groups and establishment of a coherent set of data that can form the basis of the findings in the project is another matter.

Project Activity

4 Project Activity

After reading and analysing some preliminary data collected from different sources, the subject of document legalisation still needed to be clarified. The idea of having a questionnaire (as I set out in the proposal) slightly changed. One change was due to the awareness of people, especially those who are in the driving seat such as policymakers and those who have influence in decision-making. A qualitative method (interviews) seemed a better approach to data collection.

There is a very small amount of literature on document legalisation. Despite searching in many libraries, the internet, history books and tax reports, the subject seemed obscure. Even though many organisations deal with document legalisation, the small amount of research published on this subject suggests that perhaps little attention has been paid to this area by researchers.

As explained in Chapter 2, the business of document legalisation has been in existence for more than two thousand years, and hence it is a process that is in use by all countries around the world. However, amazingly, there was very little research on this subject. This was the main reason for introducing the subject historically, giving a better insight into the subject.

I decided to start by looking at the history to find ‘when?’ and ‘why?’. Document legalisation is the process of testifying that a document is true and genuine. This is an important process for any document needed for use in a court or any area of business.

Because research in this subject is new and previous research and/ or data is not available, it is arguable to assume that data collected by means of internal questionnaires and/ or interviews (primary data) is sufficient enough to draw conclusions in this quite complex operation. Due to the lack of data to triangulate and/ or other observers’ thoughts and findings, it is necessary to be critical of the knowledge in this subject. The assumption of the critical researcher should be considered and it is important to acquire data from different organisations that use the same or similar processes.

The materials needed for this project were statistical data such as that obtained from surveys and research and also, rather interestingly, evidence from cases where a similar project had already been implemented (even if on a smaller scale).

A plan to find and analyse other sources of information from those countries using the same or identical similar process drove me to meet with some personnel in high ranking positions such as Consuls and Chargé d'Affaires, for whom a coherent knowledge of the subject may be assumed. I then arranged a meeting with the Consul of the Kingdom of Bahrain and the Consul of the State of Kuwait, to discuss ways of acquiring data to enhance my internal questionnaire and interviews. This was an important move in order to compensate for the lack of research and literature in this subject.

I looked at countries that use document legalisation to investigate whether the processes were identical (such as the State of Kuwait). The Kuwait Ministry of Foreign Affairs' solution (as explained earlier) acknowledged the need for change, but the Kuwait solution seemed to lack a coherent understanding of the document legalisation process. They established a legalisation mall which can only move the queues from one building to another, rather than implementing an effective solution. For this reason, it was apparent that I needed to discuss this with the Consul.

The real problem that needed to be tackled was the process itself – the need to modernise the method of legalisation to suit today's modern society. Looking at the solution, it was apparent that at least this subject had been explored and that there are motivations and a need for change. It was also clear that the method and reasoning behind the change needed to be studied further rather than just using a subjective approach.

The main player in this process is the Consul who is assumed to be the writer and/ or the *Notarius* who can attach a seal and authenticate a document and, therefore, one of the most important sources of knowledge. I have successfully interviewed two external Consuls (Bahrain and Kuwait), making sure beforehand that the process used in both countries are identical to the one I am investigating.

The process may be identical, yet to synthesise data I decided to also look at another organisation that uses a similar approach. I chose to acquire information from the largest organisation in this field, "The Hague Apostille", which serves over 65 states. This

organisation was in the process of modernising the Apostille and the same reasons that I discussed in Chapter 2) also applied to this project.

The Hague Forum acknowledged the need for change and provided an insight into the problems facing an Apostille (document legalisation) in many areas in “The First International Forum on E-Notarisation and Legalisation (2005)”. Here it was also recommended, beyond doubt, that the business of document legalisation needed change.

The system proposed in this work will use a database system as the backbone to store and enable users to verify documents electronically. Knowing that the system also can be used visually, i.e. the document must be self-explanatory with regard to the authentication process, there may be a need to establish a visual method to legalise documents, for example incorporating visual marks onto the original documents.

Another organisation that can be assumed to be attached to the process is the Arab-British Chamber of Commerce. This organisation is at the forefront of the process; even though it is outside the research boundaries, it is still linked to the system.

4.1.1 Arab-British Chamber of Commerce

During the interviews with senior staff and Consuls, the name ‘Arab-British Chamber of Commerce’ was frequently repeated as the organisation is very much linked to all Arab governments, and especially to their commercial business.

In due course, a decision was made to meet with the representative of the Legalisation Section at the Arab-British Chamber of Commerce. This successful meeting enabled me to retrieve even more data, both qualitative and quantitative.

The Arab-British Chamber of Commerce (ABCC) was established in 1975. As they deal with all of the Arab countries, and especially with the economic activity of the Arab countries (including the legalisation of trade invoices), it was important to gather information by both interviews and questionnaires.

The ABCC work in co-operation with all Arab businesses and official bodies, in particular the League of Arab States and its specialised agencies such as Arab diplomatic missions in London and Chambers of Commerce around the world.

Since employees at the ABCC deal with all countries in the Arab world, the Chamber would have experience of and be well-qualified to compare the methods of legalisation. Adding the status of an independent employee could also be an advantage. The fact that each and every employee deals with legalisation and must be certified by a governing body (the British Chamber of Commerce) and issued with a certificate makes this organisation a highly respected one. As such they are issued a Certificate of Trade (Certificate of Origin) which should be attached to each and every commercial invoice to be legalised.

After a tour of the organisation, observing different department processes, I successfully conducted an interview with the Head of the Legalisation Department. This gave a very good insight into the business of legalisation, prior to the process that takes place in the Destination Country. It is possible that the business of document legalisation in the ABCC is beyond the scope of this project, but this still provided an insight into the process that occurs before the document arrives at the Destination Country (agent).

However, the principle of document legalisation still applies, with document traceability and the registration of documents being issued with the Certificate of Origin, which is the hallmark of the process.

The interview with Head of the Legalisation Department at the ABCC aimed to reflect on the process of Document Legalisation with regard to security, traceability and authenticity of documents. This was achieved by looking at a different organisation with a similar process, providing a link between business in the Origin Country and the process of Document Legalisation.

4.2 The Questionnaire

“We should think of the questionnaire as an important instrument of research, a tool for data collection. The questionnaire has a job to do: its function is measurement.”

[Oppenheim 1992, p.100]

Questionnaires are merely a method of data collection. They are well suited to the positivist based on the assumption that reality is measurable and that it is independent of research. However, the reason for this assumption, as described in Chapter 2, is that the knowledge in this subject can be assumed to be historically composed and replicated by people. In other words, it can establish unrealistic information. Therefore, I needed to examine questions such as the method used for tracing documents, which will help determine fact from fiction.

What I hope to gain from the questionnaire is an understanding of the day-to-day work – the process that is conducted and how it is done. This is the main area where the questionnaire is important; to discover what the processes and daily work involve. This can only be obtained by questioning those who perform the work.

While designing the questionnaire and after researching questionnaires I identified some areas that needed changing and decided to divide the questionnaire into two main groups: users (customers) and staff including managers. The reason for this decision was to allow the analysis of responses by people of different levels and to include a specific question for the staff to allow analysis of detailed information that may not be understood by users.

I decided to start with an introduction that stated the purpose of the questionnaire and the use of data and that the researcher would refrain from using data that the participant considered sensitive. It also stated that the questionnaire has no marks or indications assigned to it as to the identity of the participant, adding that the questionnaire held only a mark and reference to the data collected. This should be sufficient to establish a level of trust and confidence to retrieve good and honest answers. Every questionnaire distributed had a unique serial number for which a replicated answer may be traceable, yet the unique identifier will not refer to the participant.

It was necessary to design two types of questionnaire. The questionnaire given to staff would include all questions that were given to the users. The analysis of data that is acquired from only one branch may not give a complete picture and, therefore, the need to establish a channel to collect data from different branches was a must, as discussed in Research Methodology.

The questionnaire was divided into five groups: General, Comments, Process, Management and Costing. These divisions would help me analyse the needs within the organisation and give an awareness of the areas where changes might be required. As Oppenheim (1992) stated, "*What a questionnaire measures depends on the issues under investigation, the aims of the study and the research design*".

According to the structure of the questionnaire, the first section would satisfy the search for awareness of the subject in 'general' terms, including mobility and the general public use of the internet. The responses to the Process section would identify the need for any changes in this area and so need to be carefully analysed. Answers to the Management group of the questionnaire would be used to assess change in relation to the cost and where tangible benefits could be gained.

The slow pace of survey returns gave the impression that there would be a delay in obtaining the results, but the survey results were very important. Even though I had results from other sources, I had designed the research methodology to consider the internal survey results.

Due to their importance, the surveys returned needed to be analysed and considered as and when they were collected. The only solution was to use a spreadsheet and record the data as information arrived. The spreadsheet was designed to change statistical figures such that when new data was entered the figures and graphs changed accordingly. Therefore, the research data, figures and graphs automatically updated the information in the report (please refer to Appendix C for the detailed analysis of data collected).

The response from the survey was disappointing; out of 192 questionnaires distributed only 71 were returned, which amounted to 36.9%. The distribution of the questionnaire by hand in all local offices of the organisation and sending the questionnaire to some other branches was very time consuming. The low response rate of the questionnaire may be due to the circumstances of employees working in this profession as

well as the sensitive area of work. However, despite the low number of responses the survey produced a good level of information about the reality of the social and routine aspects of the process as most answers were very similar.

To synthesise and analyse data in the most appropriate way and to draw a complete picture of the legalisation process, I needed to obtain data and information from other organisations working on the same process. This data could be both qualitative and quantitative. Knowing the complexity of this issue, I met with Consuls of other countries asking for help with the distribution of questionnaires and conducting interviews with key employees.

It was then time to set a plan to meet with some of these organisations and distribute data to strengthen the internal and external data collected from government establishments such as the Arab-British Chamber of Commerce. As this organisation deals with all Arab countries, I thought that this would be the best way to gather information and data which may be suitable to triangulate with other data.

In other words, the questionnaire would be distributed to people at three levels: the internal questionnaires distributed to staff internally (including customers), the external questionnaires distributed to other government establishments and the external questionnaires distributed to other organisations dealing with legalisation on behalf of customers.

4.2.1 Questionnaire Data Analysis

A graphical representation of data was very important to me at this stage. The intention was to make sense of the data and, at the same time, compare other sources of data such as other surveys. The primary raw data could produce a picture by itself. The mechanism to form coherent data and establish meaning of the data was a real challenge. To analyse and synthesise collected data, Oppenheim (1992, p.174) stated that “*The questionnaire has a job to do: its function is measurement.*” However, measuring such complex data needs a tool and methodology to enable researchers to draw meaningful conclusions from the figures.

The distribution and the collection of the questionnaire was the first part of the process. The analysis of the data from different groups and forming a coherent set of data that could form the basis of the findings in the project was another matter. Statistical significance testing should be used in data analysis and is expected by the audience, including stakeholders. It is, therefore, important to utilise statistical data analysis tools to evaluate and test the statistical significance of other test results.

Nevertheless, the area of statistical testing has been under much scrutiny. Haig (1996, p.201) stated that *"It is a major professional embarrassment that researchers continue to employ such tests in the face of more than three decades of damning criticism"* and Schmidt (1996) challenged: *"Consider this challenge: Can you articulate even one legitimate contribution that significance testing has made (or makes) to the research enterprise (i.e., any way in which it contributes to the development of cumulative scientific knowledge)? I believe you will not be able to do so"*. However, statistical testing on its own cannot evaluate and establish meaning of data unless triangulated with other findings. This is where a mixed method of research is very useful.

The significance of statistical testing should not be the aim and, therefore, it is not the main factor to draw conclusions and/ or evaluate the project's findings. Yet again, finding a method by which data can be summarised in a more acceptable format for analysis required utilising statistical tools.

Data needs to be represented in graphical format. Likewise, statistical findings may be summarised in a descriptive and more appropriate style. Much of the criticism of statistical analysis derives from the belief that statistical significance alone can solve problems or reliance on statistical testing. In other words, statistical significance testing may be used as a confirmatory result. Representing data in many graphical formats should not be the ultimate aim. The reality is to test the data to summarise and form descriptive statistical information. Measures such as central tendency and measures of variability are as important as the graphical format.

Mean, median and mode are known to be the main statistical functions to measure the central tendency but other functions known for measuring variability, such as standard deviation, range and variance, are more descriptive and give a better insight into data (Rubin, 2009).

Data representation, including descriptive statistical analysis, should then be triangulated with qualitative data to form a more coherent set of data. This (the final data) should be solid enough to evaluate and conclude findings. Data representation in a graphical format can take many styles, one of which is the representation of raw data to give a better picture, such as a bar chart histogram or pie chart.

Another method of data representation is to use a descriptive statistical analysis that can be the basis for a graphical representation, for example mean, standard deviation, skew and kurtosis. Figure 4-1 shows the section of the Data Analysis Sheet which I designed as the output for descriptive analysis:

Question	d. Can you trace the status of old documents (please state how many years)? (i.e. How do you know that a document was legalised by your organisation?)				e- What methods are used to trace old documents? (i.e. a manual search, an automated search, a computerised search?)			
	Traceability				Auto/Manual			
Statistical Data Analysis	Mean (μ)	1.229			Mean (μ)	1.643		
	Median	1.000			Median	1.000		
	Mode	1.000			Mode	1.000		
	Standard Deviation (σ)	0.516			Standard Deviation (σ)	0.917		
	Kurtosis	4.301			Kurtosis	-1.368		
	Skewness	2.241			Skewness	0.781		
	Sample Variance	0.266			Sample Variance	0.842		
	Coefficient of Variation	41.967			Coefficient of Variation	55.841		
	Total Participant in This Question	70			Total Participant in This Question	70		
	Confidence Level (95.0%)	0.12078			Confidence Level (95.0%)	0.21491		
	Total Distribution	133			Total Distribution	133		
	Percentage of returns	52.63%			Percentage of returns	52.63%		
		X _{min} =	-0.32	X _{max} =	2.78		Step=	0.045
	X _{min} =	-1.11	X _{max} =	4.395		Step=	0.080	

Figure 4-1: Descriptive Statistical Analysis. Source: internal questionnaire

Standard deviation is the measure of the dispersion of a set of data from its mean. The more spread apart the data is, the higher the deviation; it is a measure of variability in a set of data. The use of this function is to assess the degree of dispersion of values around the mean (central tendency). It is, therefore, important and can help to assess and calculate the probabilities that occur for the data collected.

The skew of data describes the asymmetric degree of the distribution around the mean. The product of skew, if positive, indicates the distribution of the asymmetric tail extending more (there are more cases in the tail of the distribution than in the normal distribution) and vice-versa if it is negative. Kurtosis describes the peak style (flattened or normal) of the distribution, a negative value indicates a flattened curve (flat distribution).

The method used to illustrate data in a graphical representation should also be clear and easy to understand, for example graphs for the normal distribution and cumulative probability. Figure 4-2 shows the graph of normal distribution and cumulative probability:

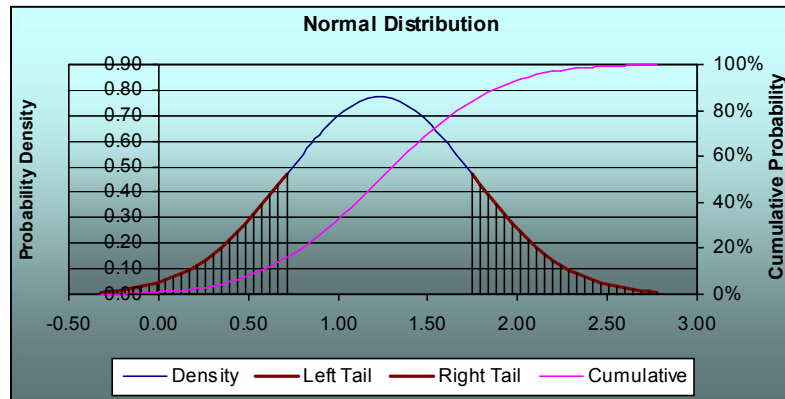


Figure 4-2: Normal Distribution & Cumulative Probability. Source: internal questionnaire

One Standard Deviation (σ) from the mean accounts for around 68% of the total data, two account for 95% and three account for 99%, as indicated in the data analysis sheet shown in Appendix C. The Z score transforms the normal distribution shown in the graph to standard distribution thus giving a complete set of data.

4.2.2 Computer Software Tools

Data collected by means of a survey needs to be organised into a dataset format that can be analysed. A database for all returns of the surveys must be created. Choosing the right software to analyse and investigate the data can be straightforward. There are many software packages on the market that are designed to deal with such an operation. When deciding which software to use, the size of the data and methods of operation must be considered. SPSS is known to be a good package.

Microsoft Excel, on the other hand, has many statistical formulae that can be utilised to perform statistical functions. The size and complexity of the data in this project needs no more functionality than Excel provides. Considering both this and my personal thoughts in controlling the output format and report style, Excel was best fitted to this project.

One drawback that could be an issue when using Microsoft Excel is that Excel is not a specialised software package, and was not designed to be. It is a generic package that may be used for many numerical needs such as finance etc. However, the flexibility and

dynamic approach of the interface may give me more freedom to design the output and utilise the mathematical functions to suit my needs.

Using Excel I designed a template for the questionnaires in a data analysis sheet, choosing the right formulae and graphical representation for the data (as seen in Appendix C) where each and every question was analysed separately. However, not all questions should be analysed using the same method; some questions need to be answered using a frequency interval, whereas others may be set to be Yes/ No. Hence changes to the answer sheet will be frequent. The decision to make an analysis sheet for each question should solve this problem and will give good data representation accordingly.

Choosing the right formulae in statistical calculations was difficult and time-consuming. Groups had to be arranged and analysed and results needed to be synthesised in another print format. As such, a common statistical function was placed at the top of all analysis sheets and the data was thereafter analysed accordingly and a graphical representation placed in the same sheet to form a consistent report output.

4.2.3 Analysing the Usefulness of the Questionnaire

Before distributing the questionnaire I piloted the questionnaire in the form of a semi-interview, asking the questions on the questionnaire; the answers given seemed to be subjective.

Following the distribution of the questionnaire, and while analysing the questionnaire, the result was somehow disappointing. I could observe that the knowledge of the employees was accumulated and inherited from their superiors, which reflects the very assumption of the critical researcher in the assumption that the knowledge is historically composed.

The results from the questionnaire reflect the routine performed by the employees, rather than providing knowledge of the overall process, but what I am after is the reality of the process.

I have to assert that the questionnaire was designed to collect information from staff. In due course I found that some question responses were out of context, due to the reason stated above. Therefore, I decided to omit some questions and concentrate on the

interviews/ reviews of senior staff, as adding to the experimental process was more important.

4.3 The Interviews

"Interpretation, in the sense relevant to hermeneutics, is an attempt to make clear, to make sense of an object of study. This object must, therefore, be a text, or a text-analogue, which in some way is confused, incomplete, cloudy, seemingly contradictory - in one way or another, unclear. The interpretation aims to bring to light an underlying coherence or sense."

[Taylor 1976, p.153]

Interviews are known to be a qualitative method for collecting data in research, as Terence (1998, P.8) acknowledged by saying "*coherence within common beliefs does not seem to be a ground for claiming to have found objective principles*". Hence an interview may shed a light on the subject; however, again knowledge can be critiqued as a coming from a critical researcher approach.

But this knowledge can be assumed more important than that of the questionnaire, due to the position and the level of authority of the interviewees. The data collected from interviewees, therefore, can be assumed to be the view of decision-makers and must be accounted for. This is a reflection of interpretivists in the assumption that interpretivists do not account for dependency and/ or independency between the phenomena studied, but instead focus on the complexity of human sense making.

Interviewees were carefully and purposefully sampled and grouped, according to their role and level. In-depth interviews were conducted for obvious reasons, as knowledge of this subject is confined to very limited personnel. This added to the difficulty in finding experts such as Amb-1 who has a very high level of experience in this subject; he has been in the business of document legalisation for 23 years as Director-General of the Dubai Chamber of Commerce & Industry. I took the opportunity, in addition to the interview, to arrange for a presentation at a later stage to acquire a review and understand his reflection on my research. In total I managed to interview two members of high ranking personnel.

Another group, as mentioned previously, was the Consuls who mainly deal with document legalisation on a daily basis and are assumed to be decision makers or highly

influential on decision makers. I planned to interview seven Consuls but in due course I only managed to interview five. The fact that they deal with this business on a daily basis means they must, therefore, be qualified to give fact and figures. Interviews, as described in the methodology, were open-question, allowing the interviewees the time to elaborate on answers. The questions and the layout of the schematic diagram are illustrated in Appendix C “Interview schematic diagram”, as is a sample of interview script.

At a managerial level the issues with the interview changed. For obvious ethical reasons consent must be obtained beforehand, as it is for all other interviewees, with an additional declaration that the data obtained will not be forwarded by any means to any other third party. This declaration is made for two main reasons: one is the ethical consideration as discussed in Chapter 3 and the other to obtain sincere (unbiased) answers. It is worth mentioning that prior to the interview with a manager a consent from the Consul must be obtained. I planned to meet with at least six managers. I was lucky as I was able to meet with seven as I took the opportunity to conduct an interview with a visiting diplomat (to be Consul).

In the process of interviewing Consuls and managers, I came across a complex issue. This was the reflection of the naturalistic approach discussed in the Methodology Section, where the picture of the acknowledgement of the interviewee may not be complete if other aspects were not present. Hand gestures, word tone and actions may be telling and provide more knowledge which words alone cannot describe. For example, tapping on the table while saying ‘no’ cannot be weighed the same as saying ‘no’ alone. Likewise the tone of the word ‘no’ alone cannot express the full extent of feeling and acknowledgement. Hence a face-to-face interview may clarify and acknowledge the question further.

The basics still apply (as to how to interpret hand gestures and/ or actions in tangible and meaningful ways) and these can be assumed to be given an equivalent rating in the questionnaire where ‘agree and strongly agree’ are shown.

With the above in mind, an ethical consideration must be applied as the interviewee does not realise that their behaviour can be accounted for and/ or are observed and they did not give consent for this. Added words may represent ‘hand gestures’; even though unspoken it is still translated into another meaning. This ethical dilemma can be solved by repeating the questions in acknowledgment of the interpretation of the behaviour, for

example ‘So you are strongly agreeing/ disagreeing that’ This can be assumed to be one of the benefits of the semi-structured interview as answers may open up another query to eliminate ambiguous answers. After all, the consent was to record answers in a way that can be understood by the interviewee as the answers are given in spoken languages.

The other element that may be of ethical concern is the language interpretation. Most of the interviews were conducted in Arabic and hence there was the need to advise all interviewees of my intention to answer (to fill in the dotted lines) the questionnaire. After all, the reason for the interview was to record relevant knowledge of the topic as Taylor (1976, p.153) stated that “*Interpretation, in the sense relevant to hermeneutics, is an attempt to make clear, to make sense of an object of study*”. The format and language used is, therefore, irrelevant. Taylor (1976, p.153) acknowledged the fact that “*This object must, therefore, be a text, or a text-analogue, which in some way is confused, incomplete, cloudy, seemingly contradictory - in one way or another, unclear.*”. It is the task of the researcher to query and analyse the information in the most appropriate way.

The key point of the recorded answer is to give an insight into what the answer of the interviewee to the question was. However, a complete picture should be drawn (as emphasised in the research methodology). Reflections to the answer should always be made after conducting the interview.

This drove me to sit down after the interviews to rearrange the written notes taken to form a complete picture of what was recorded. In conducting interviews, carefully applying the basic rules such as avoiding leading questions¹⁵, one fundamental criterion to consider was how much information needed to be given to the interviewee. It is illogical to start questioning about the process of the subject before establishing an introduction to the subject itself.

A very brief introduction may result in a naïve answer to the questions. On the other hand, a detailed introduction to the topic that may give some hint to the anticipated result may lead to biased information. It was, therefore, essential to give a good and informative introduction to the subject and the reason for the interview, so as to understand and learn

¹⁵ A leading question is one that is asked in a particular way in order to get the answer you want. Oxford English Dictionary (2006).

about the subject from an experienced person, rather than giving an insight into the research and the result expected from the study.

Avoiding a leading question should not be assumed to involve only the wording of the question and/ or the tone, but may extend to the behaviour of the researcher when asking the question. While some questions in the interviews may be generic and directly aimed at the subject, others may be considered personal such as asking the interviewee “How long have you been working in this profession?” The aim of such a question is to establish the experience level of the interviewees to determine if the interviewees have knowledge and can perhaps reflect on past experience and/ or experience at other branches.

A similar questionnaire that was distributed to the staff was used to record the result from the interview with managers, some of which were conducted over the telephone, and these were then analysed using the same method as the internal survey. Conducting interviews can even be a more difficult job. Due to the nature of their work (which can involve constant travel), some of the managers were very difficult to interview. Finding an appropriate time to conduct even a telephone interview proved less easy than expected. The time differences around the world also impacted on arranging suitable interview times.

In the interviews conducted with workers at a managerial level, the tone of acceptance varied from accepting the idea to critically questioning the reliability of the internet as a base for communication. In fact, some compared this communication with that of email and web pages.

The trial was successful and the interviews were conducted giving me a good insight into the relationships between countries with respect to this topic. However, I discovered that there are some companies which act as mediator between the Consulate and the public as well as performing the same services for the public (customer). Thus distributing a questionnaire to some of these companies could be of value due to their experience (experienced users). For this reason I approached the ABCC (Arab-British Chamber of Commerce) for them to complete a questionnaire in order to gain further insight into the process.

The data collected was then analysed, in conjunction with the internal paper survey and the external surveys from different sources. The diversity of external data and the information collected from internal surveys were added to the interviews conducted at a

managerial level, forming solid findings. (Please refer to appendix C, for a view of interview scripts & questionnaires.)

4.4 The Subject

The subject is assumed to be a pillar in any research (as explained in Research Methodology), however, document legalisation as a subject has been ignored by researchers. This added a huge difficulty when analysing and triangulating the research findings with findings of other researchers (as described in the Triangulation Section in Chapter 3).

The aim of the research was to find a solution to this prolonged and historical process; therefore, I searched back in history and archives to find reasoning for each and every step in the process. As the process was inherited from another country I needed to search archives to discover the reasons for different procedural steps. My main concern was whether it would be possible to find any documentation as the subject was so old and the reasoning may not have been documented or published.

Dividing the process into individual steps was the best method to clarify the process and find a solution for each step. As such I started the research process by introducing the history of the subject (in the literature review) to give the meaning and historical background of the early assumption of what is now called document legalisation.

However, each element in the process must have been put there for a reason. In an attempt to try to find written reasons, archives and/ or literature written a long time ago such as “Principles and Methods of Taxation” published in 1907 and “A History of Taxation and Taxes in England: From the Earliest Times to the Year 1885” published in 1888, were used. One reason became very apparent; the process was inherited from the British Empire and, hence, was innovated and implemented in the UK.

Finding such types of documents from archives was a difficult task, but establishing reasoning behind a process may not be apparent and coherent if compared only with the technology and social style in today’s environment.

The decision to introduce the history as far back as the Roman Empire was taken to acknowledge that the subject was not a new one and that the social element in the development of this subject was very important. It is, therefore, reflective on what critical

researchers argue: that social reality is historically composed and that it is replicated by people.

I focused on the conflicts and the contradictions between today's modern society living in the communication revolution and a process that shows a lack of logic when used in this modern world. In order to complement the research (in addition to the historical analysis), the important element of other organisations working in a similar environment (such as The Hague Convention) needed to be considered to illustrate how and why the changes are approached.

The detailed analysis of the questionnaire and interviews may have increased the size of the project's findings, given in Chapter 5, for obvious reasons. I thought it was very important to discuss and analyse the real reason behind each step, in order to give an insight into the proposed process.

Security and the use of the internet had always dominated my thoughts as business continuity was one of most important factors of this project. Disaster recovery was another factor in security planning; telecommunications as it stands today is the backbone of business. Looking at some mission critical projects and cases, I decided to establish and point out some strategic elements of thought during the planning and implementation of the project.

It was important to identify the forms of communication which could best serve the business and, obviously, there are areas that are more critical to businesses than others. Establishing a quick recovery in such areas was essential. It was also necessary to determine and assess any potential risks of blackouts and the backup sources.

Planning recovery should always be at hand rather than being an afterthought. As the main responsibility of the network would lie with the organisation itself, it was important to select a recovery strategy which would be ready to use at any time and which would meet the needs and requirements of the business. Most importantly, the recovery strategy should be fully documented.

4.5 The Experts' Reviews

According to the research methodology described in Chapter 3, throughout the process of the research and by the conclusion of the Findings Chapter, the findings should have been reviewed and analysed by an expert. As set out in Chapter 3, there was the need for an expert and/ or directorate level review. I planned to present the preliminary findings to the experts in a face-to-face meeting. The aim of this was to obtain quality time to discuss and analyse the findings with people who have give a higher level of authority. Another reason was the fact that I had only two people I could ask to do this who can be assumed as experts in this field: Amb-1 of The United Arab Emirates Embassy in London and the Deputy Head of Mission in the London Embassy.

A PowerPoint presentation was created to present the report to Amb-1 and I was expecting to have a very good meeting due to the fact that Amb-1 had been the Director-General of the Dubai Chamber of Commerce & Industry for 23 years.

Presenting the report to experts in this field needed a lot of consideration. First and foremost was the ability to identify the real problems that the organisation deals with in relation to document legalisation, which then provides evidence and knowledge on the subject. I started by providing the historical facts of the formation of the document legalisation process, analysing the process steps and reasons behind steps taken whilst comparing the reasons with changes of a social aspect and the technology available then and now.

I then presented the findings, highlighting the problems and risks arising from the current process, and provided solutions using available technology whilst justifying the findings. I concluded by emphasising the importance of acting on this project and showing the benefits using facts and figures (as illustrated in the Findings Section of this report).

By the end of this presentation questions had arisen about each and every aspect of the findings, particularly and critically (as it seems) with regard to the issue of the social politics of change, with the acknowledgement of acceptance at a very high level. Amb-1 acknowledged the findings by saying *“The need to change has always been one criteria that the UAE Government has been looking into yet a clear and secured option, such as this research you have conducted, is new and holds all the marks of success.”*

Due to my past experience working in this field, and especially my Masters research in “The Borderless Telephony Network” using enterprise network technology (available at <http://www.uaeembassyuk.net/resource/IPT-Enterprise.pdf>), the report then went through many stages. This took a long time (four years) until it was approved and, now that it is in the implementation stage, it seems that this project will follow suit.

This is reflected by the view of Amb-1 who said *“After considering all the benefits your proposed process gives over the current process, it seems wise to consider a change. Nevertheless, more review by a government committee needs to address the practical terms in logistical relations and implementation levels”*.

The review by Amb-1 seemed very powerful, yet another review by someone who is on the practical side of the business, a Deputy Head of Mission, recognised the importance of change albeit with a critical view. Otb-1 (Deputy Head of Mission) argues that *“When implementing new practices, in particular the proposed process, certain preconditions need to be in place in order to arrive at the desired objective. One crucial precondition is securing political commitment and leadership at the highest level possible, and having a clear understanding of any implications when undertaking the task of introducing a new methodology”*. He added *“In my opinion, a new process that is more efficient and effective than the current process should be considered and I see that this proposal has the necessary facets to take the legalisation process to the next level”*.

Both reviewers mentioned above seem to agree on the concept of change and that the proposed process is superior to the current process. Otb-1 acknowledged this by saying *“It has also revealed fundamental advantages which the proposed process has over the current one, in terms of reliability and efficiency”*.

4.6 Data Analysis and Triangulation Dilemma

In this section I will review an area in which data triangulation is used as an example of the process of research. As set out in Chapter 3, the fact that I collected data from different sources, using both qualitative and quantitative methods, could not solve the problem and the research question. Data were collected from different groups as described. However, as critical as they are, all these data are historically composed in the following example, which is a question repeatedly asked in the questionnaire and interviews: “Should the document be assumed legalised and attested if one of the following is missing: Stamp, Seal, Signature?” Table 4-1 shows the result:

Interpretivism	Positivism		Text books (Archives 1888)	
Interviews	Questionnaire	Experiments	Text books Archives	Custom Convention
33.33% believe that stamps are an integral part of legalisation, whereas 66.67% believe that they are for a financial purpose only.	77.14% assume that a document cannot be legalised without stamps	Two experimental trials for which a document was legalised without stamps, as seen in Appendix D	Dowell (1888, p.60-61) states “ <i>The tax contained the germs of the important taxes on deeds of conveyance, settlement, mortgage and lease, and probates of wills</i> ”. Armitage-Smith (1907, p.95) stated that “ <i>Some stamps are merely a convenient method of taxing a commodity; such are the duties on patent medicines and playing cards</i> ”.	Customs Convention Formalities (1924) No set of rules for using stamps, as seen in Appendix G

Table 4-1: Data analysis and triangulation

Looking at results and trying to analyse facts from figures is a typical role of a critical researcher. Both interview data and questionnaires agree that stamps form an integral part of legalisation, in other words documents cannot be assumed legalised without a stamp. This is quite apparent as the results obtained from the same groups are identical or at least very similar. This is the assumption that is apparent from this critical research.

Hence I will now focus now on the conflicts and the contradictions, and eliminate the causes of separation.

Looking at the subject at a historical level, archives give different accounts in relation to the use of stamps. The reason the stamps are used, as Armitage-Smith (1907, p.95) acknowledges, is that “*Some stamps are merely a convenient method of taxing a commodity; such are the duties on patent medicines and playing cards*”. This seems to be in line with what Dowell (1888, p.60-61) states: “*The tax contained the germs of the important taxes on deeds of conveyance, settlement, mortgage and lease, and probates of wills*”. However, this is arguable in the sense that this process has changed over time, since this historical subject as mentioned in the archives has changed, and a compulsory stamp has been used thereafter.

This guided me to use a positivist approach by carrying out an experiment that should be conclusive. A trial was carried out earlier which concluded that a document can be legalised without the use of stamp, as seen in Appendix D, which acknowledged the content of the archives.

Nevertheless, to make the argument absolute and to prove as fact, the “International Convention Relating to the Simplification of Customs Formalities” did not dictate the use of stamps, as seen in Appendix G. Hence there is no agreement internationally nor has it been proved locally that a stamp must be used in the legalisation process.

The example above is a typical example of the use of mixed methods at an epistemological level and of the data collection method. Data, methodology and observer triangulation were used to determine the reality of the question asked.

4.7 Summary

In summary, even though the sample size of the internal survey may seem low in quantity, the project has nonetheless yielded very useful data from many respectable and well-known sources (as explained). The interviews combined with surveys, the review of some case studies and the archival literature all provided meaningful information and very understandable data to analyse. Facts could then be concluded from figures which then formed a solid basis from which to draw conclusions and recommendations, which will be discussed in the next Chapter.

The subject holds the hallmark of the assumption made by the critical researcher in that social reality is historically composed and is replicated by people. This assumption is apparent in this subject (as described in Chapter 1) and hence, by focusing on the conflicts and the historical appraisal of the subject or on the formation of the current process, finds reasons that may be valid at the time yet may not be after huge changes in both social reality and technology.

After the final presentation was made to the key stakeholders and experts in this field, the comments received agreed with my findings and the necessity for implementing a new approach for document legalisation. (Please refer to Appendix E which includes samples of presentation slides showing written comments from an expert who served for 23 years as Director General of the Dubai Chamber of Commerce together with a critical review by the Counsellor (Deputy Head of Mission) for the UAE Embassy, London.)

This concludes the search in the archives of the subject to find facts, figures and reasons whilst allowing for the changes that have taken place in modern society and technology. Overall, the process of conducting interviews (even though it may seem routine, especially when considering my position and past experience), a revisit to most questions was routine in my research through analysing and reinterpreting the meaning and concerns that were put in Chapter 3. The aim was to establish a coherent understanding of the subject from people working in the practice, triangulating this knowledge with archives on the subject and the dynamics of social and technological changes since the practice began.

Chapter Five

“But finding the material for learning within experience is only the first step. The next step is the progressive development of what is already experienced into a fuller and richer and also more organized form”

[Dewey 1997, p.87]

Project Findings

5 Project Findings

To begin with, clear and informative information about the process's steps needed to be established and clarified. It is also important to state that all countries in the Arab world, and more specifically the Gulf States, use an identical process. This fact was established through the interviews and surveys that were conducted with members of more than three organisations. They were needed to clarify that the first step of the current process, as far as the destination countries are concerned, is a request to have a document legalised and attested by the Origin Country. All destination countries confirmed the fact that the process begins upon the receipt of a document to be attested by the Origin Country.

5.1 Current Process

The current process of the legalisation of a document goes through multiple stages. To start with, the document must be verified by the Origin Country (the local Ministry of Foreign Affairs, MOFA), and then the Destination Country agent (Embassy/Consulate) will verify and legalise the document. Accordingly, various stamps and signatures are affixed by the appointed personnel and the document is handed over to the person (Owner). The document must then be verified by the Destination Country MOFA. The MOFA then verifies that the stamp, seal and signature on the document are genuine, affixes a stamp and seals the document with a signature. The document at this stage is approved and legalised and can be used in all government departments in the Destination Country.

When this document is then presented to any department in the country, it is known to be legalised visually because the Ministry of Foreign Affairs has approved it. There is no verification other than by visual appearance. In brief, the steps to legalise a document after it has been legalised by the Origin Country are:

- Embassy/ Consulate - To analyse visually that the document is attested and legalised by the Origin Country. This is done by the visual appearance of the document and the agent (Consul) will then add the following, usually on the back of the document:

- Affixing a stamp (similar to those used in mail/ post), used for financial purposes only.
 - Embassy seal.
 - Appointed agent signature.
- Ministry of Foreign Affairs - The document needs to be verified by the MOFA of the Destination Country by:
 - Affixing a stamp (similar to those used in mail/ post), used for financial purposes only.
 - Ministry seal.
 - Appointed agent signature.

This can be linked to the history of document legalisation (as stated in Chapter 2), where the current method is based predominantly on visual appearance. Yet, in the midst of the technological revolution and the dramatic change in communications during the last decade, and after the internet established itself in every corner of large and small businesses, the thought of utilising this phenomenon was seen as an exciting technological development and highly recommended by technology experts.

In an interview with senior personnel (Head of Document Legalisation Unit) at the ABCC, when asked “if the security implant on the document they issue was sufficient”, A-ABCC-1 (2009) stated that “*while the method we use is so secure as we pre-print the paper from an official printer and we use serial numbers on all our documents, we discovered that there was somebody who forged our documents. Fortunately the document serial numbers we use cannot be replicated and hence, after discovering the forgery, we took them to Court*”. This reveals that, no matter how the security implant is secured, relying on visual appearance alone cannot make documents immune from forgery.

Relying on a document’s appearance cannot be justified in the current business climate. Since the internet is a global network, establishing a communication which will inherit the characteristics of the internet means having borderless communication and communication that reduces costs and improves staff mobility.

Using this technology to be a medium in communication (hence a borderless communication) provides the ability to check on a document that has been legalised. This may eliminate the use of visual authentication and could prevent forgery.

5.1.1 Document Appearance

Notably the process seems to have some reasoning that goes back in the history of notarisisation, as explained in Chapter 2. The second step is that the document needs to be verified and attested by the Destination Country Ministry of Foreign Affairs. The reason for such a process is to authenticate the assigned personal (agent) signature. The reason for this is understandably due to the fact that this authorised personal is not known to other departments within the country and hence the only department that can verify the signature is the MOFA. The reasons for this process, agreed by all interviewed Consuls and managers, is as follows:

- The Embassy/ Consulate authenticates the stamp and seal/ signature of the Origin Country but not the contents. This can only be done by the appointed personnel in the Embassy/ Consulate of the Destination Country.
- The Ministry of Foreign Affairs can then authenticate that the signature/ seal and stamp are made by the appointed personnel of the Ministry of Foreign Affairs in the Origin Country.
- The destination in which the document is going to be used can only recognise the stamp/ seal of the Ministry of Foreign Affairs.

To illustrate the main process in a graphical representation, Figure 5-1 shows the steps of document legalisation:



Figure 5-1: Document Legalisation Steps

The steps taken in legalisation can be changed as Step 2 requires only the authentication of the appointed person's signature. This is due to the lack of communication in the past between the Embassy/ Consulate and the main branch, together with the fact that the destination department cannot identify the appointed signature for the same reason.

It is arguable to say that Step 2 is not essential if the destination 'department' can identify the signature of the appointed personnel. Step 2 can then be avoided and hence the process simplified to create a 'one stop' legalisation process. This assumption was derived after the consultations (interviews) with senior personnel from three countries (including the UAE). The overall response will be discussed in the Current Process Evaluation.

5.2 Evaluating the Current Process

The discussion of ‘Step 2’ in the process of legalisation (authentication by the Ministry of Foreign Affairs) establishes that this step is merely due to the process’s history and that it was intended to provide authentication of the appointed personnel’s signature. This can be acknowledged by some ongoing processes. In the interviews conducted, when asked “if the document must be authenticated by the Ministry of Foreign Affairs”, a mixed answer appears to be valid by Consuls. C-UAE-1 said “*It appears that this step is not as necessary as there are some documents going beyond this step (such as business invoices) and the reason for that is that we distribute the Consul (appointed personnel) to the ports/ airports in the country and therefore it is recognised at the point of entry.*”. This view seems valid as it is similar to the signatures of the Consul in the passport visa. Visas and signatures in travel documents need no other verification other than that occurring in the ports/ airports.

Commercial invoices, on the other hand, need no verification from the MOFA of destination countries. They are merely used in the port to prove that fees and duty have been paid. This adds to the argument that travelling visas give an insight into the fact that the process in Step 2 is merely a historical process. To triangulate this area of concern I revisited the same question and re-evaluated the opinion when C-UAE-2 was asked “if the document must be authenticated by MOFA for it to be legalised?”. A different opinion was revealed through the statement “*How else will the destination department know that this signature (by me) is the true and valid signature?*” adding “*And who will check that the fee is correctly calculated?*”

Likewise, C-BAH-1 argued that “*the main reason was for the Ministry of Foreign Affairs to authenticate the signatories and hence it is difficult to do so by any other department in the government*”. Both answers seemed to use the same argument: the authentication of the agent’s signature is the crucial element rather than the flow of the document’s process.

Nevertheless, the answer to the question can be ‘by using technology to justify and authenticate the document’s legalisation status’, using the same argument revealed by C-UAE-1: “*It is now in practice that some documents legalised may be used without being*

authenticated by the Ministry of Foreign Affairs, similarly the visas issued and signed by the Consul do not need authentication made by Foreign Affairs except in ports”.

In response to the same question, C-KWT-1 revealed a different answer, stating that *“It is possible to do so but, in order to skip the MOFA authentication, it means we have to employ a specialised person in each and every department in the country which shows that this can be costly and unpractical”*. This argument seems to be valid due to the difficulty in authenticating the validity and appearance of a security implant.

When asked “Why is there a difference between commercial invoices and other documents?” (as commercial invoices need no further authentication, unlike others), C-UAE-1 stated that *“Airports and ports are known and limited. Having to employ a specialised person to do that is easy”*, adding that *“commercial invoices are used once unlike other documents such as certificates and other personal documents which can be used for a life time”*. This was also agreed with by both C-UAE-2 and C-BAH-1.

This issue could be solved by storing all legalised documents and hence there would be little difference between commercial invoices and other documents. This concluded that Step 2 can be eliminated by using other methods for searching for documents providing authentication.

The agreement between high ranking personnel in the interviews was emphasised when asked “If ignoring and substituting Step 2 into a more and dynamic method using computers to identify documents could be legalised”: 46% agreed, 30% arguably agreed whereas only 23% disagreed (as seen in Figure 5-2). Nevertheless, the real challenge is to find an alternative dynamic and secure authentication method that can replace or eliminate this step.

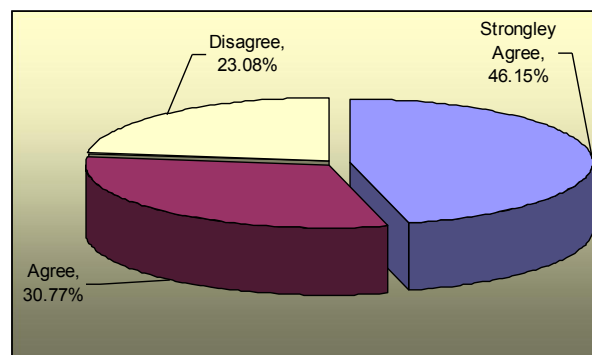


Figure 5-2: Result of Interviews on the Agreement to Ignore Step 2,

5.2.1 Type of Legalisation

Document legalisation can be divided into two main groups: personal documents that relate to individuals, such as academic certificates, birth certificates etc., and documents that relate to an organisation exporting goods to a Destination Country.

Different types of document carry different costs for legalisation. Different countries may also set different values. Table 5-1 shows the fees for different types of business documents as they stood in November 2009.

Categories: Description	Fees (DR)
Certificate of Registration or Incorporation	2000.00
Memorandum & Articles of Association as one document	2000.00
Company Record of Achievements	2000.00
Company Trade or Financial Report	2000.00
Certificate of Good Standing	2000.00
Power of Attorney for the purpose of opening a Branch Office in the UAE	2000.00
Agency Agreement or Company Contract	2000.00
Assignment or an Authorisation for registering Trade Marks and Patents	2000.00
Authorisation or an Agreement for the purpose of transferring or selling company shares	2000.00
Undertaking Certificate	2000.00

Table 5-1: Categories of Documents Associated with Business Activities

Trade invoices for goods to be exported to the UAE are to be legalised in accordance with the value of the invoice. Table 5-2 shows the fees that are associated with trade invoices.

Invoice Value (DR)		Stamp Usage								Total (DR)
Min	Max.	5000	3000	1000	500	300	200	100	50	
0	10000							1	0	100
10000	30000							0	0	200
30000	60000							2	0	400
60000	90000					2		0	0	600
90000	150000				1	1		0	0	800
150000	250000			1				0	0	1000
250000	500000			1		1		0	0	1300
500000	1000000			1	1			0	0	1500
1000000	2000000			2				0	0	2000
2000000	Max.				2/1000 of the value					

Table 5-2: Commercial Invoices and Categories of Legalisation Fees

For private and/ or personal documents that relate to individuals there may be different fees. Table 5-3 shows the cost of private/ personal document legalisation fees.

Categories: Description	Fees (DR)
Private/ General Power of Attorney	100.00
All other documents	100.00

Table 5-3: Categories of Documents Associated with Private/ Personal Requests

Different types of documents may be presented for legalisation, some of which are personal while others may be for business/ commercial reasons. Each and every type of these documents may hold a different fee; this 'fee' represents a set of stamps.

In the process of legalisation, after calculating the fee, stamps are affixed to the document. The stamps in this case represent the fee. Table 5-4 shows types of legalisation with stamp values:

No.	Type of Document	Stamp Usage						Total (DR)
		500	300	200	100	60	50	
1	Normal Certificate	0	0	0	1	0	0	100
2	Agreement	4	0	0	0	0	0	2000
3	Legal	0	0	0	1	0	0	100
4	Birth & Death	0	0	0	0	0	1	50
5	Manifest	0	0	0	1	0	0	100
6	Copy Invoice	0	0	0	1	0	0	100
7	Invoice	Please refer to Table 5-5						

Table 5-4: Type of Document and Value of Legalisation Fee

Due to the complexity of calculating fees on the percentage of invoices in comparison to the value of stamps (as the increment of the stamps may not fit the amount exactly), the system currently calculates the fee (as described) by increments of 50 Dirham (DR).

To put this in perspective, a minimum value would be 4,050 DR. A formula and pattern needs to be used to calculate the fee for an invoice. For example, the fee for a value of 2,109,250 DR would be calculated as shown in Table 5-5:

Result	Formula Used	Product
2109250	2109250*2/1000	4219 (A)
4219	IF(A>4050,ROUNDUP(A/10,0)*10,4050)/10	422 (B)
422	IF(MOD(B,5) ,B+1 ,B)	423 (C)
423	IF(MOD(C,5) ,C+1 ,C)	424 (D)
424	IF(MOD(D,5) ,D+1 ,D)	425 (E)
425	IF(MOD(E,5) ,E+1 ,E)*10	4250

Table 5-5: Formula Representation for Invoices Higher than 2 Million Dirham

Therefore, using this formula to produce the result of the legalisation fee, the fee for an invoice for 2,109,250.00 DR will be 4,250 DR. This type of calculation is bound to have errors when performed manually.

However, distributing the fee between stamps that are of a fixed value (varying between 50,100,200,300,500,1000,3000 and 5000DR) will require the formula shown in Table 11 to be used if the value is automatically distributed in accordance with the value of stamps (assuming the preview example where the total fee value is 4,250.00 DR).

The method that can be applied to satisfy the rules applied by the Legalisation Office in the case of an invoice with a value of more than 2 million Dirham should start at a minimum of 4,050DR and then be increased by 50DR values accordingly. The final fee value should then be distributed according to the stamps available. Currently the value is distributed to the exact use of a duty stamp, as shown in Table 5-6:

Stamp Value	Value	Formula Used	No. of Stamps	Remainder
5000	4250.00	INT(4250/5000)	0	MOD(4250,5000) =4250.00
3000	4250.00	INT(4250/3000)	1	MOD(4250,3000)=1250.00
1000	1250.00	INT(1250/1000)	1	MOD(4250,500)=250.00
500	250.00	INT(250/500)	0	MOD(250,500)=250.00
300	250.00	INT(250/300)	0	MOD(250,300)=250.00
200	250.00	INT(250/200)	1	MOD(250,200)=50.00
100	50.00	INT(50/100)	0	MOD(50,100)=50.00
50	50.00	INT(50/50)	1	MOD(50,50)=0.00

Table 5-6: Illustration of Automatic Calculation of Fees

The product of the above formula applied will be as shown in Table 5-7:

Stamp Value	5000	3000	1000	500	300	200	100	50
Stamp Used	0	1	1	0	0	1	0	1

Table 5-7: The Product of the Formula

The above work was carried out to clarify the method used to calculate the fee value for an invoice to be legalised. The product determines the stamps used and can exceed eight stamps (each the size of 32mm by 27 mm). The seal (which is 100mm x 70mm) is then added and, if the user asked for “an express” service, this means adding another stamp for the value of 50 DR.

This is equivalent to $5 \times 8.64\text{mm} = 43.20\text{cm}^2$ and, when including the seal area, 70cm^2 in total. A total area of 114cm^2 may be used for a normal legalisation process (please refer to Appendix D which shows the area usage of a legalised document).

On top of that, the above process is only carried out by the agent (Embassy/Consulate). There is another process for which another stamp and seal may be affixed to the legalised document in the Ministry of Foreign Affairs (MOFA) which, again, adds to the area already used on a legalised document by the Origin Country. Thus, this process can produce a document covered by stamps, seals and signatures which may make the document unusable again elsewhere by the applicant.

This could amount to extending the area used for seals and stamps to the back of the document where some important information may be printed and the document can, essentially, be consumed by seals and stamps. This is without taking into account the age and type of the document.

The distribution of stamps to a value is a step which is only needed to find the stamp required to be affixed to legalised invoices. This value is accounted for by the Ministry of Finance and has no other value, e.g. for legalisation purposes.

5.2.2 The Use of Stamps

Historically, the duty stamp used to collect tax was introduced in the United Kingdom (UK) in 1694 as a means of collecting revenue (stamp duty). It was imposed onto the document directly. Its use was obligatory for legal documents and the paper was stamped with the impression of the Greater or Lesser Seal of the relevant state, according to the importance of the transactions. In the United Kingdom, the stamped paper was a government monopoly (Dowell, 1888).

Stamp duty was also collected on some other documents. As stated by Dowell (1888, p.60-61), *“The tax contained the germs of the important taxes on deeds of conveyance, settlement, mortgage and lease, and probates of wills”*. Stamps were merely a method of collecting tax. Armitage-Smith (1907, p.95) stated that *“Some stamps are merely a convenient method of taxing a commodity; such are the duties on patent medicines and playing cards”* and the UAE and the Gulf States¹⁶, originally being British protectorates, have subsequently inherited the process. Table 5-8 shows the total stamp duty revenue as of 1904-5.

STAMP DUTIES, 1904-5	
Deeds and other Instruments . . .	3,604,676
Deeds Penalties . . .	6,022
Bonds to Bearer and substituted Securities . . .	211,939
Companies' Capital Duty . . .	388,608
Contract Notes (above I.D.) . . .	193,017
Loan Capital Duty . . .	73,140
Foreign Certificates . . .	36,195
Share Warrants . . .	61,236
Bills of Exchange . . .	700,457
Compositions for Duties on Bills and Notes of Banks of England, Ireland and of Country Banks . . .	120,769
Cards . . .	24,163
Licences and Certificates . . .	173,465
Life Insurances . . .	76,380
Marine Insurances . . .	225,001
Medicines (Patent) . . .	331,439
Receipts, Drafts and other I.D. Stamps . . .	1,577,006
	7,803,513

Table 5-8: Total Revenue from Stamp Duty. Source: Armitage-Smith (1907)

¹⁶ The Trucial States (known as Trucial Oman or Trucial Coast). They came under British administration from 1873 until 1971 and include all the Gulf States.

History clearly demonstrates the need to use stamps for tax collection thus, in time, there was no other method that could be used to do so and, noticeably, the “Foreign Certificates” stamp duty was listed.

The current process uses a stamp similar to that used in post office mail. The only purpose for this process is to calculate income for the Ministry of Finance. Historically, there was no other method available to check and find out the income other than by having the stamp value. This is exactly what Armitage-Smith (1907, p.94) acknowledged by stating that “*Stamp duties are not a special class of tax but a mode of collecting various kinds of revenue by a process of registration. They are duties upon documents or instruments essential to render certain proceedings legal.*”

The process was for the Ministry of Finance to distribute the stamps to the agents (Embassy/ Consulate) and account/ debit them for the value. Hence each document legalised would have a stamp affixed to it. Therefore, the stamp usage is the total amount of income and, after a set period of time, the Ministry of Finance will acquire the income.

Each and every document legalised must bear a stamp except, for legalised documents which are free of charge (gratis). The stamp, therefore, is the cost (fee) of the legalisation. This fee must be collected on behalf of the Ministry of Finance.

When asked why the stamp should be placed on the document, different answers were recorded; however, all agreed that the stamp is a method by which the Ministry of Finance calculates the return. The added benefit of the stamp (according to C-Bah-1) is to secure the document, therefore, the stamp can be assumed an added security.

This process appears to be valid due to the lack of technological methods of communication between departments running through history. The assumption was that the fee was not collected by the personnel of the Ministry of Finance and, therefore, for ease of management a stamp was considered to be the best method at the time.

When discussing the use of stamps, recognising that stamps are merely a method to manage fees, it was agreed in all interviews with Consuls that a document can be legalised without a stamp affixed to it. Hence, it is common practice that a document can be legalised free of charge and a stamp is, therefore, not necessary. In recognition of and to prove this fact, an experiment was conducted to legalise two documents (shown in

Appendix D) which were legalised free of charge and, therefore, legalised without having a stamp affixed to them.

When asking “if the stamp was an integral part of the legalisation?” in interviews with managers and higher personnel, over 66% thought that it was for financial purposes, 33% believed the purpose was both financial and for security, and 8% thought that security was the reason, as illustrated in Figure 5-3.

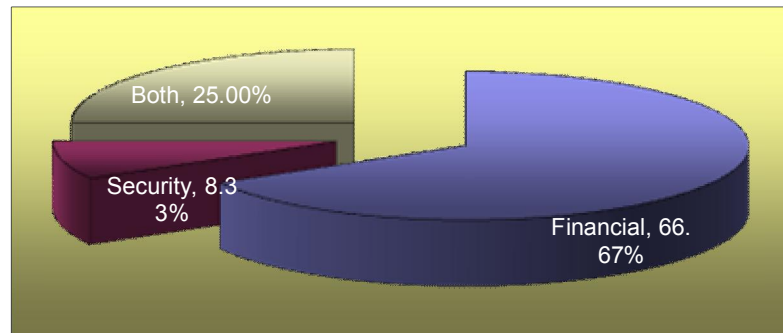


Figure 5-3: Interviewees Response on Stamp Purpose

In questionnaire responses, when asked “What was the purpose of stamps?”, 45% believed it to be a method to collect fees, 38% believed it to be for both security and fees, whereas only 17% thought it was for security only.

When employees in the Legalisation Section were asked “Should the document be assumed legalised and attested if one of the following is missing: Stamp, Seal, Signature?” over 42% agreed that the signature and the seal are integral parts of the document legalisation whereas 4% assumed a stamp was part of the legalisation and 34% assumed a signature by itself was sufficient to legalise a document. Figure 5-4 is a graphical representation of these questionnaire responses:

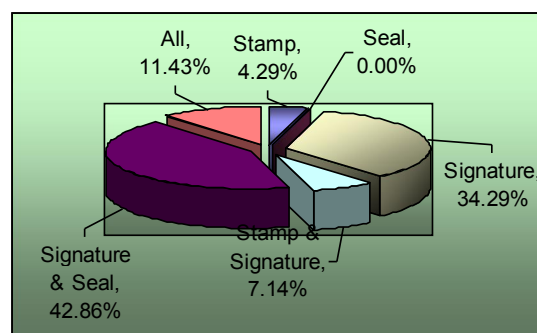


Figure 5-4: Responses for the Integrity of Document Legalised. Source: Internal Questionnaire

This and the experiment in legalising a document without the use of stamps added to the review of archives in determining that the stamps were merely a method of tax collection. As Armitage-Smith (1907, p.95) stated, “*Some stamps are merely a convenient method of taxing a commodity*”. This shows that the stamp is not an integral part of a legalised document so the use of stamps can be substituted by a more dynamic and efficient method whereby the persons in charge can monitor and check the fees online. This would be a more efficient and appropriate method for financial monitoring.

5.2.3 Security Issues

The imbedded security currently used in the legalisation process cannot be assumed to be up-to-date for many reasons, one of which is the fact that the document’s actual appearance is relied upon rather than the registration of the document and imbedded security prints. To clarify, assuming a person requires a document to be legalised from agents (e.g. in London), the person can have the document legalised on the same day they are travelling to the country and then complete the legalisation of the document in the MOFA in the UAE the next day.

The agent in the MOFA has no means of verifying the document except by the document’s appearance. There may also be no means of communication between both internal and external agents due to time differences.

The other issue with security is that the security implanted in the process of legalisation is very outdated and prolonged; relying on a person’s ability to discover abuse and security evasion is no longer applicable. The assumption that the stamps and signature are secured may prove false. This is apparent through the experience of the ABCC; even though they have tighter security on their documents, it was proved that relying on visual appearance alone is not an option that can be relied upon.

To conclude, the current method lacks many important elements that need to be implemented to improve the long-lasting historical method of document legalisation. It is, therefore, important to address and evaluate a new process for which a complete revamp method should be put in place. The proposed method should solve all the above concerns, as will be discussed in the next section.

5.2.4 Traceability

The ability to trace a document and identify all the stages that lead to the final authentication is as important in the field of document legalisation as the process itself. Neglecting the document and/ or relying on a person's ability to authenticate or retrieve the signatories from archives are bound to create errors. Adding time and effort to identify and trace a document manually is not acceptable in today's fast moving world.

Documents have been legalised for many years by manual work and/ or relying on the visual appearance of the document which may no longer be appropriate. In the internal survey when asked how many years documents may be traced back, 82% believed it could be one year, 14% said two years and 4% said many years, as shown in Figure 5-15.

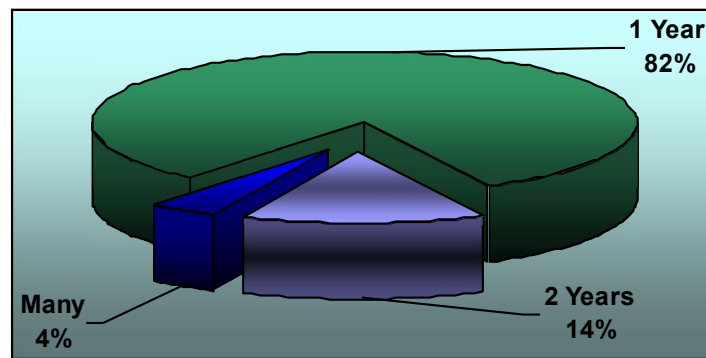


Figure 5-5: Ability to Trace Past Legalised Documents. Source: Internal Questionnaire.

However, the method used to trace the document should be in line with current technological advantages. When asked for the method used to trace a document, an alarming 66% responded that it could be manually traced and 4% believed that documents can be traced automatically, as is illustrated in Figure 5-1.

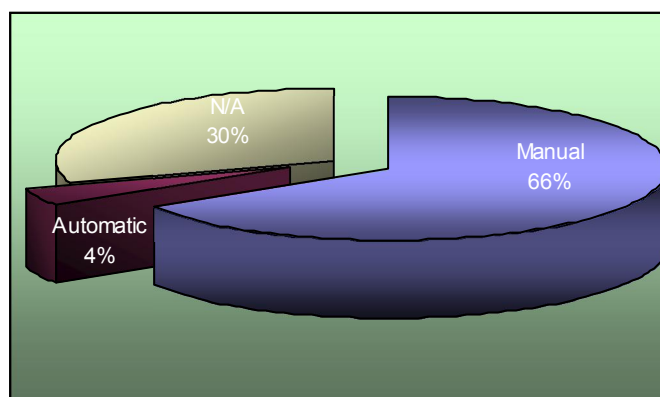


Figure 5-6: Method Used to Trace Documents. Source: Internal Questionnaire

It can be assumed that traceability in the current legalisation method has been neglected. It is the inheritance of the historical method used when legalised documents were on a small scale and easy to manage.

5.2.5 Availability

Legalised documents need to be attested and verified by the destination department and/ or the Destination Country. This means relying on a person's ability to authenticate the document's legalisation on appearance and signature. In case of any doubt, the only method then available is to communicate with the department that issued the legalised document to enquire about its validity.

The fact that a document cannot be identified other than by visual methods means the original document must also be sent. Time and effort is apparent in such an incident. The availability of the process online (as will be proposed) means that this prolonged process can be eliminated.

5.3 Proposed Process

Based on the above description of the process of document legalisation, whilst also considering the prolonged current process of legalisation, it is clear that there is an urgent need to speed up the entire process. Due to the huge expansion of business in the UAE, the country is assumed to be the hub of Middle East business today and the current legalisation process could put future business at risk.

The process (as described) lacks a secondary verification to examine the authenticity of the legalised document. This raises a large question mark as to the security adopted in the method and the tools used in legalisation, which may not prevent the fraud of false documents.

In brief, the requirements of the newly proposed system need to be defined in order to prevent the above weaknesses. I, therefore, put forward the following requirements:

- An electronic database, Registry of Documents Legalised, should be put into place.
- Electronic tagging, such as barcodes, should be used.

Stamp usage may not be necessary as it is not part of the legalisation process. In fact, it is exclusively used for financial purposes and, due to the fact that all documents legalised will be managed electronically, exact financial figures and payments can be obtained online for the use of the Ministry of Finance.

Legalised documents can be verified online in all government departments thus preventing document fraud.

The benefit of doing this is to enhance the process, reduce work and, therefore, increase efficiency. This will also eliminate security issues which will, in turn, reduce the overall cost of the process.

The newly proposed process will provide a central database system for which all government departments and interested parties¹⁷ can verify legalised documents without relying on the visual appearance of documents.

For these outcomes to be achieved, a summary of the required technology involved to complete this project would be:

- A central database, for which a backup system and secondary server synchronised with the main database would be necessary to prevent loss of data and downtime.
- Barcode symbology¹⁸ should be used.
- A computer program should be developed to issue and store the legalised records. This will also store financial data.
- A secured remote connectivity to the system would be required, using either a VPN (Virtual Private Network) or another form which would not compromise a secured network.

To conclude the proposed legalisation document flow, on receiving the document the agent (Embassy/ Consulate) will have to verify and legalise the document by issuing a label which contains a legalisation document number in the form of a barcode. The label itself may be secured, as described. After affixing the label and signing it (if necessary), the data recorded for this document may then be stored in the database in which both financial and document information would be available for the country.

¹⁷ Any person who has been presented with a document and who requests a verification of the relevant register entry.

¹⁸ A defined method of representing numeric or alphabetic characters in a barcode.

5.3.1 Document Appearance

The current process (as described) may well change the appearance of the document. The legalisation label will replace the stamps and seal. The document will be numbered using descriptive sequenced numbering and will be represented by a barcode.

Step 2 in the current process can be eliminated, thus a one-stop legalisation process will be achieved which will, in turn, add to customer satisfaction. Stamp replacement will reduce the overall process time, area used and errors that may occur in the process. Table 5-9 shows a comparison of the current and newly proposed process.

Current Process	Proposed Process
<ul style="list-style-type: none"> • Embassy/ Consulate <ul style="list-style-type: none"> ○ Affixing a stamp (similar to those used in post office mail) used for financial purposes only ○ Embassy seal ○ Appointed agent's signature • Ministry of Foreign Affairs <ul style="list-style-type: none"> ○ Affixing a stamp (similar to those used in post office mail) used for financial purposes only ○ Ministry seal ○ Appointed agent's signature 	<ul style="list-style-type: none"> • Embassy/ Consulate <ul style="list-style-type: none"> ○ Create a record and affix a record label ○ Appointed agent's signature (optional) <p style="text-align: center;">No more requirement for this step (as described above)</p>

Table 5-9: Comparison between Current Process and Proposed Process

Visual authentication, as discussed, needs to be present which could be the replacement of the stamp, however, a secured material should be in place. This material may be in the form of a label with pre-printed security features.

5.3.2 Printing Materials

One concern to be considered is the extent to which the material used is secured and protected from duplication? It is obvious that a barcode is not difficult to duplicate. However, the code used will not be recorded in the database and, therefore, a duplicated barcode will not be valid. Using more sophisticated types of barcode may enhance security but, again, they cannot be assumed to be fully secured. Having to use a more sophisticated technology to secure a document meant overloading the project in cost.

Another implanted security can be implemented by using secured pre-printed labels on which the barcode is printed. A combination of more than one security print can be applied to the labels to enhance the static security, although the dynamic double-entry security – using a barcode and database lookup – is the main reliable feature.

This is a standard type of security implant that is already in use. Vouchers, cheques, money etc. are some areas where security implants are used, some of which are costly whereas others are cheap and may be used according to requirements (please refer to Appendix F).

Having static pre-printed security labels with some imbedded security features may help improve the security of the labels. Rudolf (1997) acknowledged the use of these type of features “*Modern security features comprise labels that can be used can be firmly appended to the document by self-adhesion or hot foils printing*” in his definition of the anti-tamper printed pattern emphasised by the use of “*Fine background security patterns are offset printed on valuable documents like cheques in order to hamper mechanical erasure of variable information*”. These recommendations are widely used in industries of many areas such as gift vouchers, cheques etc., yet having the security features alone cannot establish traceability, and hence these features should be used for visual security whereas adding barcode and serial numbers should add to security and traceability. Some visual types of security commonly used for security prints are listed in Table 5-10, showing security features that may be used:



Name	Description
Solvent Security Printing Ink	<p>This method of security printing provides protection as it presents a visible indicator that the ink has been attacked by a solvent. It can be seen as a watermark and, once a solvent has been applied, the ink will change colour or bleed which indicates an alteration to the document.</p> 
Invisible Ink (UV design)	<p>This is a widely used security printing method which is simply printing using a UV ink. It is invisible to the eye under a normal light source but will be revealed when placed under a UV (ultraviolet) light source. It is a relatively cheap method and can be acquired in different colours.</p> 
Colour Changing Inks	<p>A method of printing for which the print will change colour depending on the angle of view. The ink does not change colour itself but the reflection appears as if the colour has changed. There are only three types: green to purple, gold to green and green to lilac.</p>
Biometric Ink	<p>Not an easy way to authenticate as it will require a specialist to validate. Biometric inks contain DNA agents that can be machine-read or react to a reading solvent.</p>

Table 5-10: Security features that may be used.

It is even wise to say that when selecting a hidden security print method (such as an invisible UV design), a solvent-sensitive ink is more secure to use than a more elaborate security feature such as a hologram or colour-changing inks, and will also reduce the cost of printing labels.

The design for the solvent security prints can be of any shape. It is even possible to implant a logo using the UV design and/ or solvent security ink. Solvent security prints help prevent tempering with the label and hence secure the document against removal of the label.

A more elaborate visual security label can be open to abuse as the document's hidden security needs to be relied on rather than simply the shape and visual appearance.

Figure 5-5, shows a pre-printed label, highlighting the area that can be used to implant security features. This can then be used as the basis for the legalisation label on which other information, such as a barcode etc., can be printed:

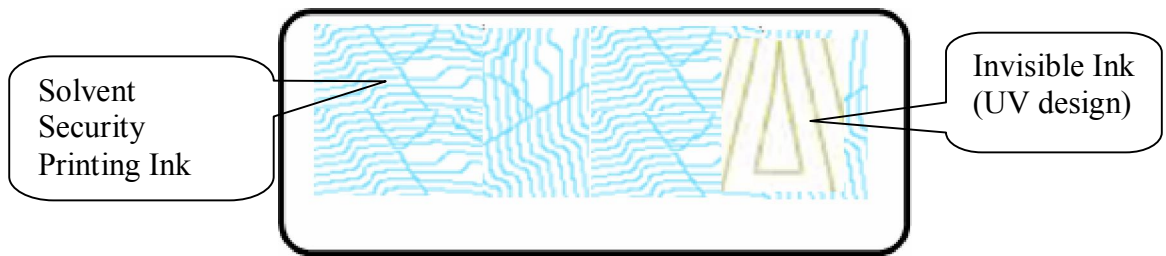


Figure 5-7: Illustration of Security Implant on the Label

5.3.3 Numbering System

The document numbering system can be informative. For example, the number may show the origin (starting point) of the document by containing a letter explaining the Origin Country as well as identifying the Embassy/ Consulate through a specific number for the agent. The type of document could be shown in the form of a number retrieved from a look-up table, since there are known types of document that need to be legalised and there may be different types of process and, finally, the document serial number can also be included.

The number (or tag number) would then show the full extent of the legalised document. The numbering could help the verifier to identify the type, origin and agent number visually, in case of the absence of online verification.

An example of a numbering system that can be used is shown in Table 5-11 which describes the sequence of numbers and meaning:

Example :CCC.TTT.XXXX.YY.NNNNNNN

CCC	County of Origin such as (UK/BHR).		
TTT	Town (Origin) such as (LON).		
XXXX	Agent Number (e.g. UK 0605).		
YY	Type of document such as		
	No.	Description	النوعية
	1	Normal Certificate	شهادات عادية
	2	Agreement	وكالات
	3	Legal	قرارات قضائية
	4	Birth & Death	مواليد ووفيات
	5	Manifest	شهادات منشأ
	6	Copy Invoice	صور فواتير
	7	Invoice	تصديق فواتير
NNNNNNN	Serial Number.		

Table 5-11: Document Numbering,

This example is only given to clarify the purpose of barcode numbering and should not be a limitation. The system should be programmed using a method in which a set of variables may be changed. These variables will govern the value of a legalised document currently the value of a legalised document is set using a stamp value with multiple stamps

being used to adjust the fee value. In changing the process the use of stamps is no longer required; the fee may be printed on the legalisation label and the serial number, as stated, will be represented by a barcode.

5.3.4 **Barcode**

A barcode is a unique printed pattern of wide and narrow vertical bars used to represent codes of numeric/ alphanumeric data. It is designed to be read by a special device called a light pen or a scanner. It is also possible to read the scanned image without the need for a device.

There are many types of barcodes. Some are designed to be used on a retail product, such as UPC/EAN. Depending on the type of application, a different type of barcode may be used i.e. showing the data type (numeric only or alphanumeric) and/ or the amount of data needed to be presented.

There are two predominant types of barcode: a single dimension barcode such as the type used in retail UPC/EAN – see Figure 5-6 – and a two-dimensional type which is mainly used to represent a large amount of data such as PDF-417/ Datamatrix – see Figure 5-7:

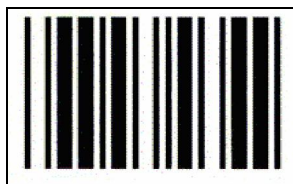


Figure 5-8: 1D Barcode



Figure 5-9: 2D Barcode

Due to the fact that the amount of information a barcode will hold will not exceed 20-30 characters, it is wise to consider a single dimension barcode which is easy to manage and the equipment needed is widely available at a very reasonable cost.

Single dimension barcodes (as described) may be used according to the type of application. EAN/UPC is used in retail applications; it should be noted that this type of barcode can only identify numeric information and a maximum of 13 digits.

The benefit of using a barcode is to embed a code by which the document can be verified electronically. By doing so, the document cannot be tampered with and the document itself is only self-explanatory when looked up in the database. This will create a double-entry security system.

There are many types of barcodes (as described); however, to select the most appropriate type for this project, many factors must be studied. A brief technical background explaining the density and ease of use also must be clarified.

Barcode density usually refers to the number of characters that can fit in a given space. Different types of barcode may have different densities. Numeric types of barcode may utilise a higher density than that of an alphanumeric barcode. However, the advantage of an alphanumeric barcode is apparent when combining alphanumeric code.

Knowing that the barcode reader may be used to encode the barcode, different types of barcode may have different readability. Code 128 is known to be the most flexible and has a higher readability than others, yet it may be of lower density in comparison with interleave 2 of 5. On the other hand, interleave 2 of 5 can consist only of numeric characters.

The other factor to consider when choosing the most suitable type of barcode is to whether the barcode will be used for retail purposes; a known type of barcode, such as UPC/EAN, is used as standard in retail.

For general purposes, and especially for document legalisation, where the use of an alphanumeric code and a higher readability are required, Code 128 may be the best choice. This provides the full 128-character ASCII set. A similar type of bar code known to be close to Code 128 is Code 3 of 9 (Code39) which will only provide uppercase letters.

Barcode printing, as well as the bar and space that are apparent, must also contain another element known as a quiet-zone – as seen in Figure 5-8 – which may add to the size of the printed barcode:



Figure 5-10: Barcode Characteristics

To conclude, Code 128 holds all the necessary characteristics required for this project. In addition to its alphanumeric capability, Code 128 has three different character-code subsets, and it also has the ability to encode a double numeric number in one code.

A special formula may be applied to calculate the size of the barcode where the height of the bars must be at least 0.25 inches. The length of the barcode varies according to the number of letters to be printed. The following formula shows the method used to calculate the overall length:

Length = $(11C + 35) X$ (for alphanumeric code)

Length = $(5.5C + 35) X$ (for numeric only)

Where:

C = number of data characters

X = X-dimension in millimetres

For example, to find the length of 18 alphanumeric letters for a dimension of 0.2mm: $(11*18+35)*0.2 = 47\text{mm}$, excluding the quiet zone and stop/ start characters. If only numerals are to be used, the total length of the barcode will be 27mm.

5.3.5 Stamp Replacement

The current process and how it may affect a document's appearance, together with the situation when a document may not have enough space to affix the currently required stamps, seals and signatures have now been clarified. It is, therefore, appropriate to introduce the proposed method which will reduce the number of stamps and seals by using a new label that is affixed with a barcode (having the fee incorporated as a numeric value) with nothing else other than a signature and seal, if applicable.

The label design may not be larger in scale than 3cm in height and 9cm in width, which will reduce the area used in legalising documents. The label will be printed by a normal laser printer, adding the document number in the form of barcode and fee. All other security features are already pre-printed.

A sample legalisation label is shown in Figure 5-9. This is only a sample as security prints may be added to enhance the label:

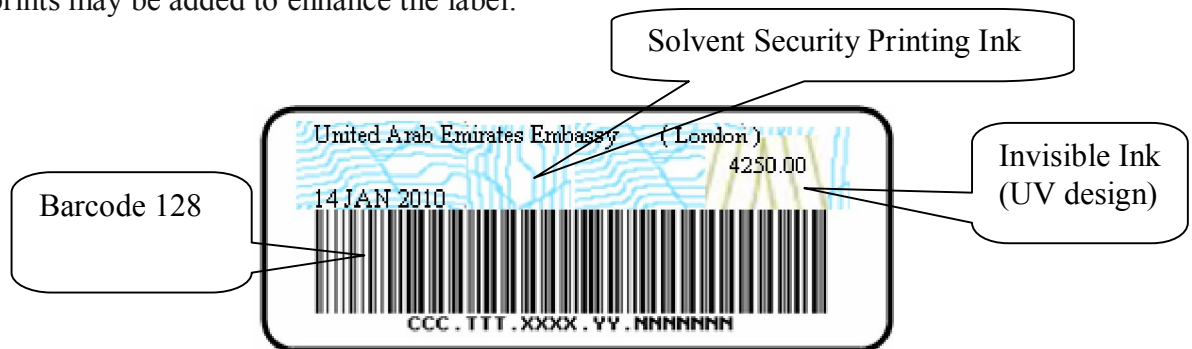


Figure 5-11: Sample Label

Other information may be printed on the label, such as the declaration stating that the agents are not responsible for the content of documents. As stated earlier, legalising a document simply means confirming that a signature, seal or stamp appearing on a document is genuine. Legalising a document does not mean that the content of a document is accurate.

The Consulate Section usually uses a stamp to print a declaration that is specific to the host country, thus multiple stamps are needed for each Consulate (agent). One way to avoid the use of manual and multiple stamps (seals) is to pre-print a generic declaration on the label which states that the Consulate (agent) does not certify the content of a document,

nor that it is accurate. An agent should avoid signing on the barcode as it may affect the process of reading the barcode.

The benefit of the new process and shape is obvious: a reduced area is required and it is a much quicker process as the label, which will have the fee displayed with the document legalisation number, will be printed directly by a computer. The number explains most of the important information about the document.

At the same time the document is traceable as all documents are recorded into a central database, which will enhance availability. Furthermore, the document records form a method by which to trace a document making it difficult to forge a document as the document will have been recorded beforehand; this should be assumed to be an enhancement in security.

Eliminating the use of stamps will simplify the process as well as reducing costs. There will then be no need to print stamps of different values. The cost of calculating and analysing the stamps used by the Ministry of Finance will be reduced to nothing as calculations will no longer be needed; each legalised document will be recorded in the database thus a report of income can be produced at the touch of a keyboard button.

It should not be forgotten that errors that may occur from manual work on tens of thousands of documents monthly worldwide; the newly proposed process will eliminate the need for manual work and, therefore, any errors occurring will be negligible.

5.4 Technology

The technology required for this project can be categorised as basic. The main requirement is to develop a database which will hold all transactions made by all branches, including those made at Headquarters. The estimated transactions according to one branch alone are shown in Table 5-12; these amounted to an average of 71,000 records of transactions:

Year	Reg. D&B	Norm. Cert.	Agreement	Appl. Fee	Cert. Origin	Legal Doc.	Total
2002	12	8,320	3,596	0	16,137	0	28,065
2003	33	8,586	9,852	0	15,047	4	33,522
2004	47	10,065	13,513	0	14,653	0	38,278
2005	72	22,095	20,636	0	22,838	6	65,647
2006	60	24,458	34,804	6,350	24,372	0	90,044
2007	74	27,428	43,518	13,873	20,376	0	105,269
2008	36	17,762	55,170	9,926	22,529	232	105,655
2009	0	16,428	54,482	8,871	21,902	345	102,028
Total	334	118,868	218,571	29,253	153,854	288,410	568,508
Average	42	14,859	27,321	3,657	19,232	36,051	71,064
Max	74	27,428	55,170	13,873	24,372	167,924	105,655
Min	0	154	3,596	0	14,653	0	28,065

Table 5-12: Transactions of Documents Legalised in 2002 - 2009

The number of records should not create any difficulty in designing a database as the record size is relatively small. Additionally, the database should be divided into two main categories, one of which is only used for information about the document and retrievable using a standard platform.

Records show a rise in document legalisation. Figure 5-10 shows the rising trend expected for the year 2009 which reflects the economic downtime and, for this, an expected increase may be calculated:

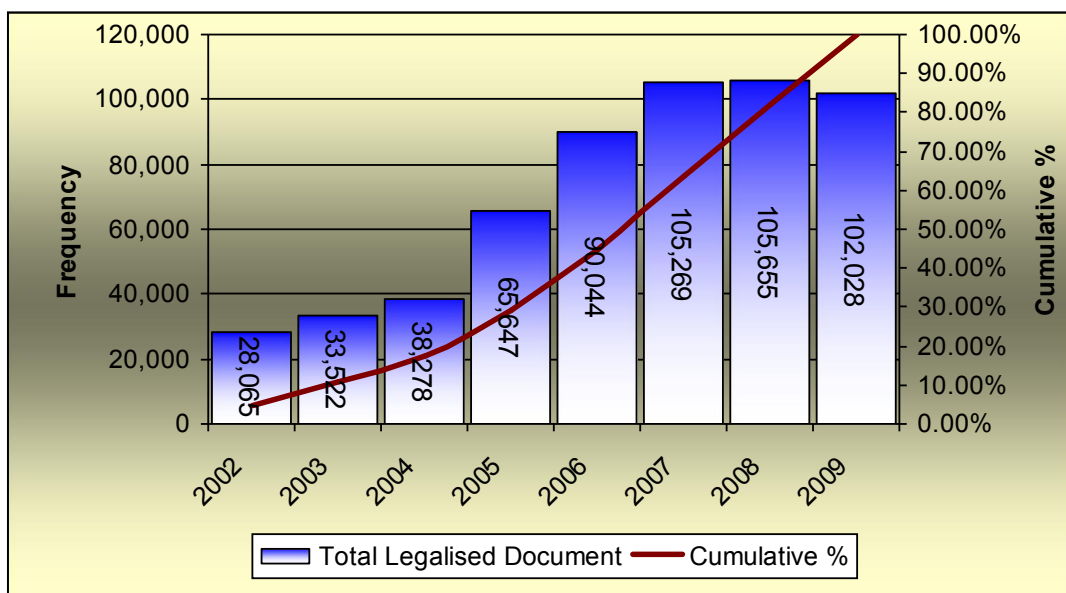


Figure 5-12: The Rising Trend of Legalisation Services. Source: Internal Questionnaire.

To reduce the risk of large data creating problems, it may be necessary to sub-divide the database ‘tables’ on a monthly basis to increase efficiency of data searches and reduce the data size.

5.4.1 Communication & Hosting

For a database server to serve a huge number of transactions (especially when it is planned to retrieve and save data remotely), a reliable, efficient and speedy method of communication should be put in place. However, no matter how reliable the communication, it cannot be assumed that this line of communication will not stall and/ or be out of service in time.

When considering the search for reliable communication, the internet is a potential source to be used as a backbone, however, internet connectivity cannot provide 100% reliability, especially when a single provider is to be used. The blackout of internet connectivity experienced in the Middle East, as reported by Beaumont (2008) in ‘*The Telegraph*’, acknowledges that “*Millions of internet users across the Middle East and Asia have been left without web access after a technical fault on an undersea cable caused major disruption to internet connections*” and quotes the Egyptian ministry saying “*This cut has affected internet services in Egypt with a partial disruption of 70% of the network nationwide*”.

This type of blackout in communication is not an isolated incident. Heacock (2009) in Opennet acknowledged a similar blackout in Africa, stating “*The Internet blackout left Benin, Togo and Niger without an optical fibre link to the outside world, meaning internet users in these countries have been forced to rely on rare, expensive satellite connections to get online*”. This guides us towards establishing a backup communication.

A backup communication should not be assumed to be a redundant line of communication that can only be used if and only when the primary communication is out of service or disturbed. It can also be utilised for speed and redundancy. There are many methods that can be employed to establish a backup communication. However, to utilise multiple lines of communication, careful consideration of multiple providers and different types of communication is needed. A bonded WAN (Wide Area Network) connectivity

can be utilised for two main reasons: the speed when all WAN connectivity is active and for redundancy (backup) use.

A bonded circuit can be used to combine multiple communication providers or an internet service provider (ISP) and leased lines all in one communication circuit. This in turn will provide redundancy, load balancing and higher speed. Adding VPN (Virtual Private Network) connectivity is one criterion that also needs to be implemented in this type of project for remote access and a backup connection, even if on a very low speed (e.g. a voice line).

This project needs to be hosted in an environment where support will be available 24/7. Downtime is one critical issue. It is, therefore, important to adhere to a standard that should eliminate downtime.

It is also important to host a server that can be reached 24/7, using a high speed network connectivity that can be available in the Ministry of Foreign Affairs or Ministry of Finance, where applicable.

Having to host a website to view the authenticated documents means that constant monitoring and good, secure hosting must be used. According to the report conducted by Maple (2010), most attacks are on shared and dedicated hosted environments. Figure 5-11 shows the trend of attacks.

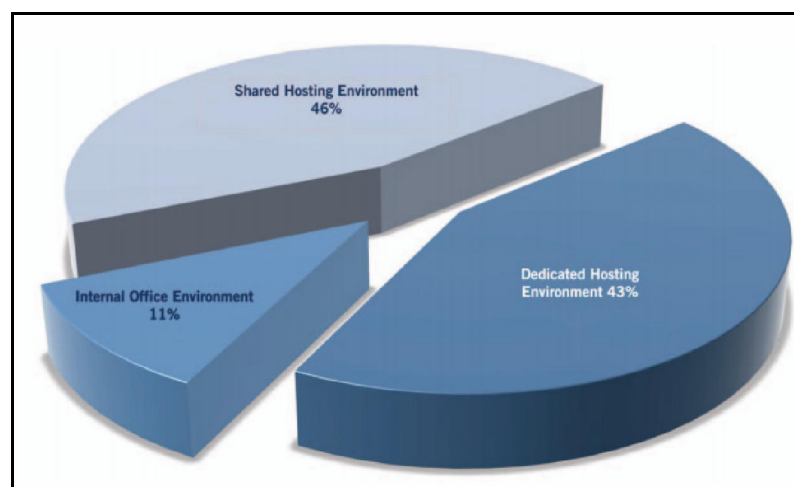


Figure 5-13: Trend of Attack on Hosted Environment. Source: Maple (2010)

However, most attacks exploit the weakness of the configuration rather than the infrastructure. Maple (2010) explains “*The lack of protective equipment such as firewalls*

or hardware virtual private networks (VPNs) were also contributory factors to these types of attacks. Either they were not present or they were not configured correctly to prevent an attack”.

Connectivity to the database server should be available worldwide. Restriction issues in some countries may be avoided by having dial-up services, e.g. VPN remote access can be used. Figure 5-12 shows the ability to configure VPN.

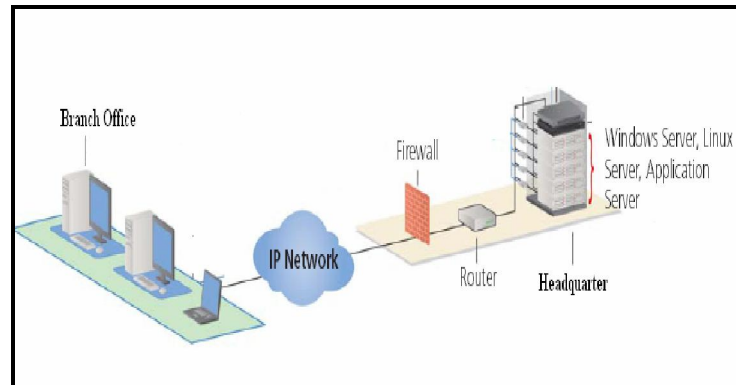


Figure 5-14: VPN Connectivity

When considering the most appropriate method of remote connectivity, backup methods of connectivity are also important as different countries may have some restrictions and/ or technology weaknesses which the system must account for. Figure 5-13 shows the position of dial-up connectivity.

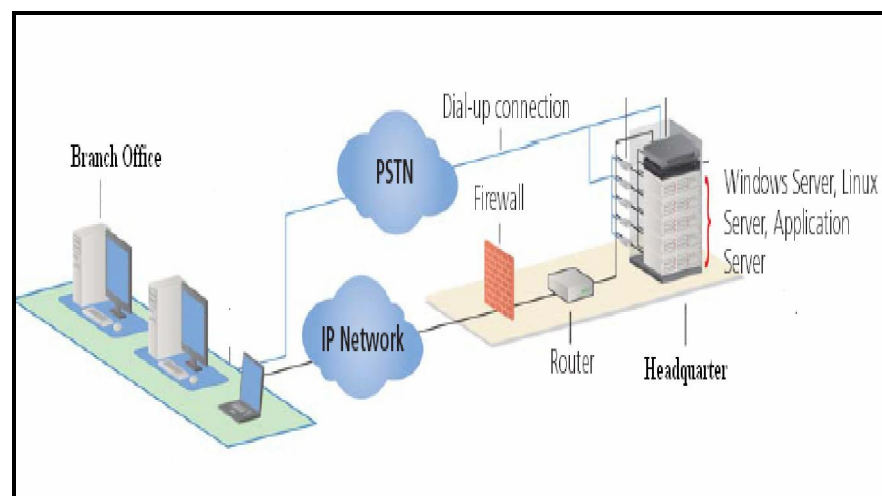


Figure 5-15: Dialup Connectivity

It is, therefore, important to account for a method of multiple connectivity by which the system can utilise the bandwidth; one idea is to use a multi-WAN gateway. The

benefit of using such connectivity is to optimise bandwidth and load balancing so they can be used at the same time as a redundancy backup connectivity. Figure 5-14 shows the principle of using the Multi-WAN gateways.

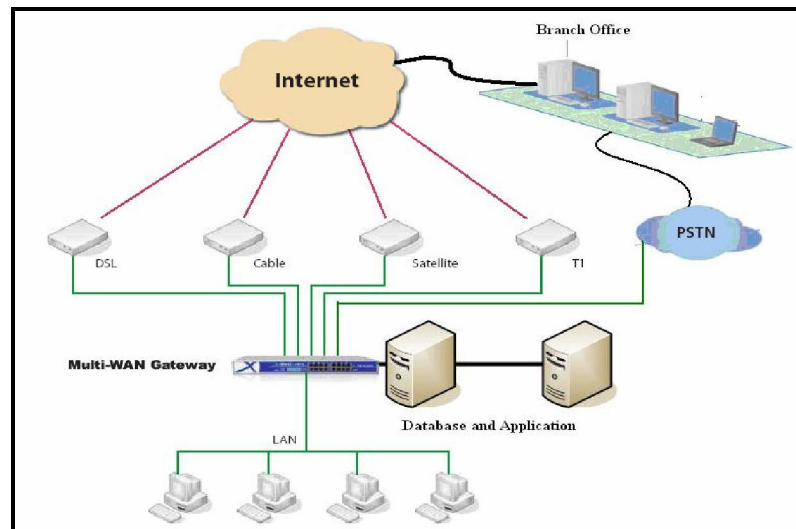


Figure 5-16: Multi-WAN Broadband Gateway

Establishing this type of connectivity may help also in adding another service, IP telephony, which will help to create a private telephony service between branches. Some Multi-WAN gateways have the ability to utilise VoIP services such as the support for H.323 VoIP products.

MAC address cloning is one way of enhancing security as this makes it possible to limit access to the system to a known PC only, which will limit public access. Therefore, this is one way of separating public access using a web-based application to the web server whereby the web server will feed the enquiry from the application server.

5.4.2 Backup Servers/ Database Replication

A secondary database server needs to be available, which runs in parallel to the main server synchronising all data and which will serve the system in the case of a main server failure, forming a rigorous data backup system.

Implementing a branch-level server may be a solution to reducing traffic. This should be considered, based on the amount of work, when implementing a multiple server

(branch database server). Data replication may be considered to update the main database server periodically with all information.

5.4.3 Backup Process

There is always a risk of system malfunction. Network connectivity to the main database may stop functioning; this error could be avoided by creating a secure dial-up connection and/ or creating a local database system which will synchronise data when connectivity is established.

Another consideration is to transfer periodic information manually (on a daily/ weekly basis). This is only in extreme cases. This level of malfunction should not be reached; however, in an extreme situation a process sending database updates by another method (other than direct connection to the server) may be required. The medium that can be used varies from physical (disks, USB memory sticks etc.) to email.

The priority is that network connectivity should, therefore, be utilised using a multi-WAN Broadband Gateway (please refer to Figure 5.14 for details). This method will secure the best communication, prioritising connectivity in addition to utilising bandwidth. Hiles (2007) acknowledged that *“There are many solutions and technologies on the market at the moment to assist in improving our WAN and internet resilience. Multi-homing or multi-WAN switching provides one such solution”*. He added that *“Multi-homed solutions can offer immediate detection of link failures with automatic failover to another available link”*. The multi-WAN, therefore, can be utilised for load balancing, adding to the failover and recovery of communication.

5.5 Evaluating the Proposed Process

The proposed process will eliminate one step (Step 2) due to the considerations discussed above, allowing the system to be a one-step legalisation process. However, to evaluate the process it needs to be looked at as two distinct elements: the process itself and the technology used to fulfil the process. This area needs to be discussed further, beginning with the signature of the agents, the stamps used and documents serialisations.

5.5.1 Signature

A signature has always been used to validate authenticity. Handwriting is a form of authentication which has been around since the beginning of civilisation. Furthermore, a signature has been accepted by each and every culture. It is the only evidence of one's recognition of the content and implications of written words.

The authenticity of a written document can only be confirmed by handwriting (a signature) and, therefore, it is routine that any document that is not signed will not be accepted as authenticated.

However, the assumption that someone's signature is consistent each time is arguable. In this age of advanced technology in many fields, biometric technology can identify people by many methods such as by measuring some aspect of an individual's anatomy or physiology (i.e. hand geometry/ fingerprint) or by behavioural characteristics (i.e. handwriting/ signature).

The huge advantage of using biometric technology, especially for this project, is that the signature of appointed personnel is the only criterion to legalise a document. On the other hand, we know that a false signature (a forged signature) can only be identified by an experienced person. Thus relying on the visual appearance of a signature may not eliminate forgeries.

The importance of a signature on any document is that it is physical evidence of the presence of the agent, unlike other types of marks on the document that can be attached without the physical presence of the agent.

Using technology to do the job for us can be an advantage. One type of technology that could be used is biometric technology – using a biometric signature etc. Biometric technology has been under huge scrutiny, especially when biometric data (measuring an aspect of an individual’s anatomy or physiology) is to be stored in a database from which cloning might be possible and, hence, the complete identity of a person could be cloned.

This argument can be solved by storing the data in a smart card such that a comparison may be carried out during the point of presence of the person. In this project, the reason given for the use of a signature was the presence of the agent and, hence, the use of biometric authentication can fulfil the criteria. A digital signature would be printed and provided in the presence of the agent using biometric authentication.

The vulnerable points of biometric technology start with the scanning of the biometric data. It is at this stage where some systems store the data in a database. Using a database means allowing the data to be available to others. Having the data stored on a smartcard (proximity card) means it will safeguard the data’s availability to others. This card will be held by the person himself and, at the point of presence, the card data will be verified with the person (physical biometric data).

This may form the long-awaited technological solution to replace the manual signature. Signing the number of documents that need to be signed can be very time consuming, considering an average of over 71,000 documents each year. Furthermore, the proposed process will allow manual signatures if necessary (please refer to Table 5-12 / Figure 5-10).

The proposed change of the method to authenticate a document from a manual signature to a biometrical method of signature will enhance security and speed up the current process. According to the findings illustrated in Figure 5-10 and Table 5-12, this could be an average of 71,000 documents per year or 250-300 per day. As the trend shows an increase in business, for which each and every document needs to be signed, there is a clear issue with speed, which adds to the security difficulties.

The automation of this step in the process (by enabling automatic signatures) will enforce the presence of the person.

5.5.2 Traceability

The current process lacks an important element (document traceability) for any process that deals with documents. Implementing a computerised system means that all documents can be traced using a unique identification number and also adds the ability to identify the final destination where the document is assumed to be completed, e.g. the final stage for a commercial invoice¹⁹.

Traceability is one of the major benefits of the newly proposed process. According to the findings, 4% of respondents to the survey believed that a document may be traced for many years, whereas 82% believed it could only be traced for one year. Documents that have been legalised for many years by the manual method and/ or relying on the visual appearance of a document may no longer be possible to trace.

The internal survey also revealed that the method used to trace an old document is conducted manually and as such the opportunity for a mistake in confirming a document's authenticity is opened up. Hence mistakes and delays are dominant and, thus, traceability within the current legalisation method can be assumed to be neglected. The historical method used when documents are legalised was inherited from when the number of documents was on a small scale and easy to manage.

5.5.3 Availability

All legalised documents can be verified using an online system, unlike in the current process when documents cannot be authenticated except by their visual appearance meaning that errors are bound to happen. Additionally, any query needing to be processed through this prolonged procedure (sending a letter to the Ministry of Foreign Affairs then verifying the document again using a visual method, which may take time and effort) requires specialised personnel to identify and provide authenticity.

The new process would allow all departments to verify legalised documents online requiring no more than a touch of a keyboard and, hence, no specialised personnel are needed to do the job.

¹⁹ The commercial invoice's final stage is when the goods are received from the port.

The current process relies on a document's appearance, thus the document needs to be verified by the origin department. Authentication may require a time-consuming process, i.e. a letter from the origin department.

The current proposed process solves this problem by allowing users to verify a document using an online system, unlike the current process which cannot be authenticated except by a document's visual appearance meaning that errors are bound to happen. Additionally, any query needing to be processed through this prolonged procedure (sending a letter to the Ministry of Foreign Affairs then again verifying the document using a visual method, which may take time and effort) requires specialised personnel to identify and provide authenticity.

5.5.4 One Step in the Process

The findings of this project proved that the current steps taken in legalisation can be very different as Step 2 is only needed to authenticate the appointed person's signature. This was due to a lack of communication in the past between the Embassy/ Consulate and the main branch, together with the fact that the destination department cannot identify the appointed signature for the same reason.

The proposed process eliminates steps, which can be assumed to be a beneficial enhancement to the process, adding to customer satisfaction by allowing the customer to do a "one-stop shop".

5.5.5 Mobility

Mobility is the ability to extend the business process beyond the boundary of the office. Quantifying the benefit of mobility is a difficult scenario as it is an intangible benefit. The most important factor is to measure the overall benefit of mobility by looking at the increased efficiency and/ or productivity.

Looking at surveys is one way of measuring this intangible area of benefit. The Larstan Business Reports (2003) clearly show that 49% of the respondents gave positive replies when asked if "*mobility initiatives would contribute to organisation strategic objectives*". Figure 5-17 shows the graphical representation to respondent:

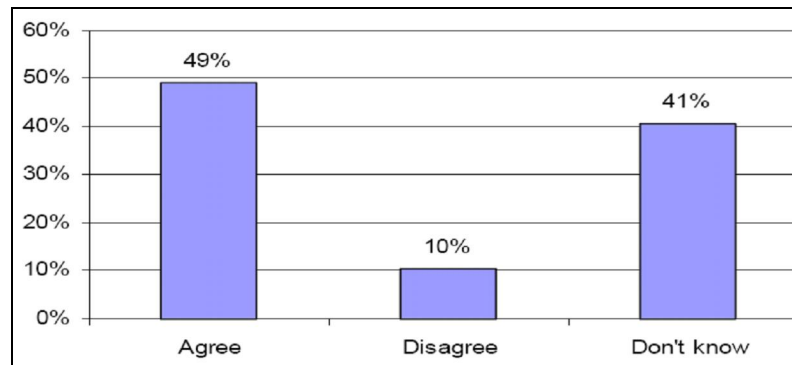


Figure 5-17 : Mobility Contributes to Organisation Objectives
[Sage Research, February 2003]

The trend of mobility can be assessed from the public use of the internet in many businesses, such as with internet shopping. In the internal survey, when asked about the frequent use of the internet 51% assumed internet shopping was frequently used, 19% moderately used and 30% not used. Figure 5-18 shows the graphical representation of these results.

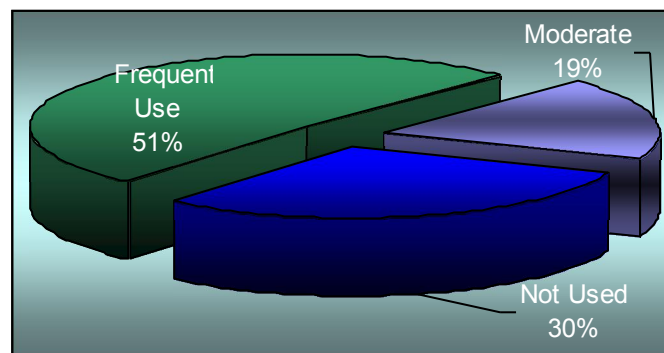


Figure 5-18: Frequency of Internet Shopping Used. Source: Internal Questionnaire.

Another element to assess the importance of mobility in public use is the use of eBanking. Internet banking needs to be trusted to be used. The findings show that that internet banking is seen as being important by many: 30% believe it is highly used, 30% see it as moderately used and 36% think it has low usage. Considering the sensitivity of internet banking, this indication of the high use of this business in turn describes the importance of mobility. Figure 5-19 shows a histogram rating the use of internet banking.

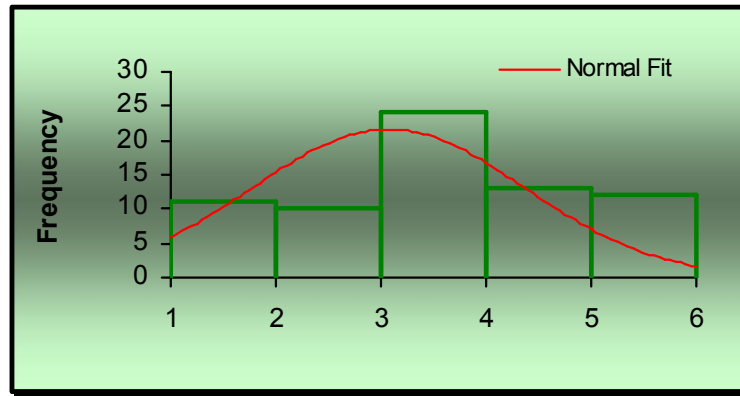


Figure 5-19: Internet Banking Rating (1-5). Source: Internal Questionnaire.

From the above statistical analysis it can be concluded that the reasoning for mobility (even though its benefit is difficult to quantify) is apparent in the results of the survey; mobility will increase efficiency and, thereafter, productivity.

The capability of movement and being able to verify documents in many areas (such as in ports and airports) is one criterion that the system should consider. Legalised documents could be verified in any place using a hand-held barcode reader. The hand-held barcode reader could hold data or even use a wireless communication to the main database.

There are several forms and different types of platforms available. The ability to verify documents on the fly is, therefore, as easy as in the office and does not need an expert to be employed to verify a document's status. This is only the case when using an electronic method of identification such as a barcode. It is even possible to automate gate entry using the same method or even verify documents remotely, using images of the documents or even just the number.

A mobile (hand-held) barcode scanner can be programmed to verify documents, either using a built-in database which is downloaded from the main database or by linking to a wireless connection to the main network. Currently, mobile devices can be programmed into a strong encryption – 128-bit is widely used. Portable wireless barcode scanning devices, therefore, can be secured. Packets passed between the mobile devices and the central database will then be protected. If http (Hyper Text Transfer Protocol) is used, the mobile device will act as an enquiry (read-only device) to check for the validity and authenticity of the document's status in a similar manner to a web-based application, e.g. item browsing on commercial websites.

5.6 Potential Pitfalls

The benefits and advantages discussed above should not make us turn a blind eye to the potential pitfalls that can happen, especially if the system is based upon a data network and uses the internet, which is known for potentially hazardous activity such as hackers and strains of viruses, as a backbone.

Some of the potential pitfalls are easy to manage, whereas others require more attention. Having the above advantages usually comes with a cost. It has to be determined if the benefits outweigh the cost. The threat of viruses and hackers are potential problems that could affect the network but, again, they are already routinely accounted for in modern network technology. This, in other words, will not add any overhead cost to the current network infrastructure.

5.6.1 Security

Opening the company's private data network to the internet automatically exposes it to the associated threats, some of which are known to the IT staff, e.g. viruses, Trojans and hackers. These problems are part of the package of the huge cloud known as "the internet".

Security is another critical issue and is complicated by the extra weight carried by the network when network ports and addresses are added. This is obviously an issue that is addressed in any data network and, hence, this should be considered no more than a reminder with an extra caution that the network is now time-critical.

Most databases deployed on servers are commercially available, e.g. Microsoft SQL, Oracle and DB2. The servers hosting these databases are known to be targeted by hackers and also some known viruses. If, under any circumstances, a hacker breaks into the database servers, potentially sensitive information will be at risk.

Databases are particularly at risk from so-called hackers. A study by Maple (2010) acknowledged that *"40% of all attacks utilised SQL injection as the source of the compromise with an additional 20% on top using SQL injection combined with another vulnerability such as malware"*. Figure 5-20 shows the vulnerability leading to data compromise.

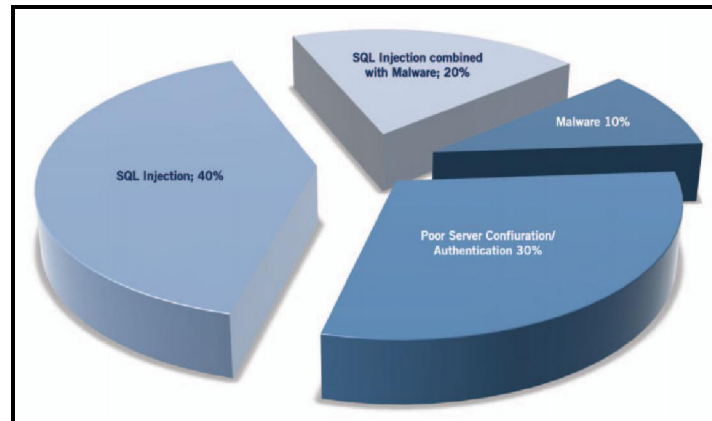


Figure 5-20: Vulnerability Leading to Data Compromise. – Source: Maple (2010)

Another known problem is that the database servers are deployed with a factory setup system, including the user setup. Leaving the default configuration unchanged compromises the network security. These devices should be encrypted and user access should be controlled.

It is, therefore, important to separate the database servers behind a firewall. Installing frequent updates containing the latest patches are routine work for an IT department. Even so, it is important to keep monitoring the network to keep an eye on possible intruders.

However, with all the benefits of the proposed process, there are still some risks – opening a door to the internet means inheriting all the associated risks. It must, therefore, be the organisation’s IT policy to protect the network and gain the benefits of the system in a secure manner.

5.6.2 Eavesdropping

The ability to intercept messages and conversations by an unintended recipient, known as “eavesdropping” and described as a “man-in-the-middle attack”, needs to be addressed. However, this type of attack is known to IT staff and, therefore, accounted for in any network.

The principle used to block unattended recipients is understood by the industry and many solutions are already in use such as the Diffie-Hellman exchange (Zou et al., 2005). Basically, the exchange of information between two parties generates random public and

private keys, where the private key remains secret. When a conversation starts, each combines the public and private (shared secret) key. This shared key is then used to encrypt another random key.

User access to the database is limited. It is only to view limited data, using a web server which in turn will retrieve data from the database. Therefore, there will be no high threat to security.

It is only when authenticating a user to issue legalisation documents that another set of software and secure connectivity should be established. VPN and/ or another set of secured communication may be used for this purpose.

Another method that can be used is to initiate the transactions locally and then replicate them using secured connectivity to the main database server.

Computer communications are secure and very robust. Most of the threats (as explained in Chapter 2) rely on a lack of management of data transportation rather than computer-based security.

5.6.3 Denial of Service

Using the internet as a backbone for communication inherits the good and bad of an IP network. Denial of service (DoS) is one type of known attacks in the world of IP networks. It is not exclusively an IP network problem. Legacy telephony networks are also susceptible to DoS (Janczewski & Colarik, 2005). If a person repeatedly dials a number it will stop the victim from receiving or placing a phone call. This is a simple method for denial of service. What makes this type of attack especially associated with IP networks is the automation of the attacks. Attackers make use of the ability to flood the network with unwanted traffic using software called internet worms.

The purpose of this attack is to consume the resources available in the network which, finally, will disable the computer or the network. To protect the system against such attacks a multiple method of protection must be used. It is the norm for any data network to be protected through the use of a firewall and router filters (access rules) and also through the installation of up-to-date patches in the corporate servers. One of the known methods of protection is to eliminate all unused network ports. Additionally,

enabling a network bandwidth quota will also help limit attacks, but the most effective method of protection is regular network monitoring and immediate action when needed.

Denial-of-service attacks are widely known in data networks. Solutions and preventions of such attacks have also been widely developed. Figure 5-21 shows a schematic diagram illustrating one of the many methods available to prevent the network from such attacks.

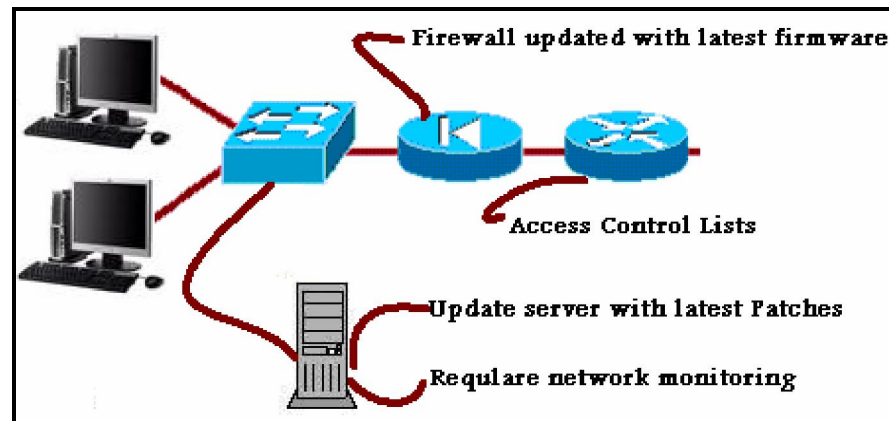


Figure 5-21: Network Protection

A report by an independent testing company (Miercom, 2003) shows the mitigation of DoS attacks. It is quite clear that, when the attacks start, the traffic increases. By the time the attack is identified and mitigated, the traffic is back to its original flow. Figure 5-22 shows the graphical representation of this analysis.

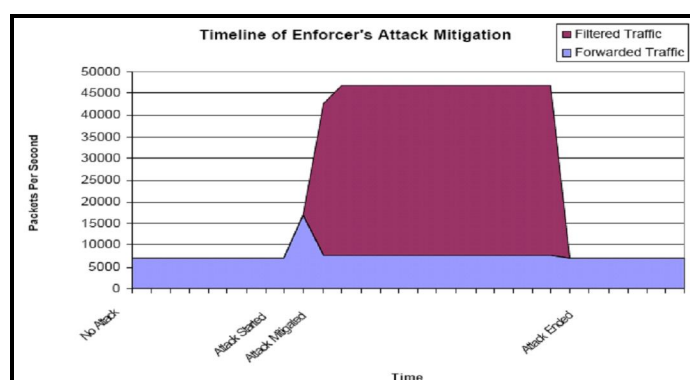


Figure 5-22: Attack Mitigation. Source: Miercom Power Secure Enforcer (May, 2003)

For the above security threats to be rectified, security circles need to be implemented. As shown in Figure 5-23, the terminal to be used for document legalisation will hold no data but will connect to the main database using VPN (virtual private network)

connectivity, whereby the system is secured using biometric security. This will allow only authenticated personnel to access the computer.

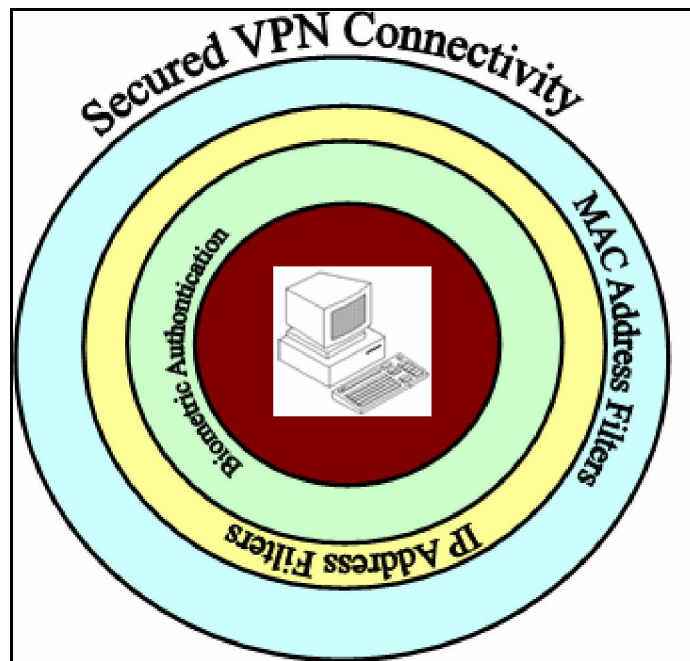


Figure 5-23: Security Circles Around Computer used for Document Legalisation

A second circle of security is the IP address filtering, where the firewall will only allow the specified IP address to access the database and, hence, no other computer other than that specified can access the database using VPN.

The third circle of security will be the use of a MAC address²⁰. A firewall can be utilised to filter all connectivity to the main database.

With all the pitfalls and benefits identified, a final analysis is needed to determine the financial impact of such an implementation, which is discussed in the following Chapter.

To conclude, the suggested method to be used in the legalisation terminal must, therefore, be secure as described in figure 5-21. The user must, therefore, be behind a firewall that filters both IP and MAC addresses, adding the use of biometric authentication. VPN connectivity will be the prime method for network connection between the legalisation terminal and the main database servers, hosted in a secure environment in a database centre. The legalisation terminal is the only computer that has the ability to access

²⁰ A unique identifier assigned to network interface cards, Media Access Control address (MAC address).

the database servers and the only one that is allowed to add and/ or modify records, and hence security is paramount.

The above security measures are only applied to the legalisation terminal, due to obvious reasons, as this terminal has the ability to add and modify records of legalised documents.

The database servers that will be used via web servers are read-only, allowing the user to enquire about the legalisation status of documents. These can, therefore, be accessed via the internet. It may be advantageous to use a Secure Sockets Layer (SSL) to protect communication between users and the web servers.

Enquiring about the status of a document will not involve any financial transaction and, therefore, a Secure Sockets Layer (SSL) may not be necessary. The system will then enquire about the status of the document using the serial number of the document, and retrieve the information from the main database server that is accessed on a read-only basis.

5.7 **Implementation & Ethical Considerations**

“In most countries of the world, the “information revolution” has altered many aspects of life significantly: commerce, employment, medicine, security, transportation, entertainment, and so on. Consequently, information and communication technology (ICT) has affected — in both good ways and bad ways — community life, family life, human relationships, education, careers, freedom, and democracy (to name just a few examples). “Computer and information ethics”, in the broadest sense of this phrase, can be understood as that branch of applied ethics which studies and analyzes such social and ethical impacts of ICT.”

[Terrell, B. 2008]

The field of ethics has always been the domain of philosophers and social critics. Being in a business field (information systems), which is quite sensitive to employers and employees, this project should satisfy both. The idea behind the project was not a new process. It is merely a new computerised system and was inherently explained to the employees, informing them that it would not affect their employment status. I endeavoured to explain that this project would mainly enhance the existing manual process, reducing the overall process overheads of the organisation while enhancing the security, reliability, traceability and mobility of the whole process.

The question of ethics in the computer industry has always been the centre of attention, especially when it involves human data and/ or voices. It was such even before the internet revolution which opened the door globally to the implications when data gets adrift to another party or parties. Since the 1980s, when the personal computer (PC) became a home icon, philosophers started to question the ethical implication of storing personal data on PCs which can be transferred into other forms of digital media. Johnson (1985) argues that *“computers pose new versions of standard moral problems and moral dilemmas, exacerbating the old problems and forcing us to apply ordinary moral norms in uncharted realms”*. Even though, at that time, the interconnectivity and the internet were not in the reach of the public domain, the ethics were already present.

The argument of ethics started very early, even before the internet revolution which opened the door for many ethical considerations. As a document published online can reach millions in a matter of seconds, this new world of technology opened up the subject of computers and ethics even further. Likewise, Moor (1985) says *“Computers are*

logically malleable in that they can be shaped and moulded to do any activity that can be characterized in terms of inputs, outputs and connecting logical operations”.

Whilst James Moor’s discussion dates back to the 1980s (at a time when world-wide communication was basic and when the internet was not on the agenda), since then the concept of ethics has changed rapidly in the computer industry. It has even become so involved that some journals like ETHICOMP (<http://www.ccsr.cse.dmu.ac.uk/journal/>) specialise in this active topic of the ethical consideration in the computing industry today.

Since the project touches modern technology, and considering that data is the subject of the project, it was also important to note the many regulations that needed to be addressed. In the UK, one of the regulations is “data protection” but regulations in other countries must be explored as the project was designed to be used globally.

Introducing a project that will be used globally requires attention to data protection at a global level. However, there is no set of instructions that is applied globally. Therefore, personal data protection is ambiguous. Each developed country has its own legislation which needs to be addressed, studied and conformed to.

In today's world computers can have complex effects on human life. The computer can potentially strip away our privacy and, therefore, the ethical obligations of IT specialists and the threats to privacy are important subjects in computerisation. Cyber-crime and/ or other forms of computer-based crime are also issues being increasingly discussed in the computer world.

In this project, I ensured that a minimal amount of information would be used, adding to the use of high level protection (as explained earlier both in discussion of network infrastructure and data protection). The design of the new approach considered this area, even though it merely touches on personal data (data subject). The system, as designed, protects all data and hence will adhere to the legislation of the data project. In other words, the data stored will include limited information that is not even viewable by anybody except the “data controller” and the data subject.

5.7.1 Ethical Relativism vs. Absolutism

Most ethicists reject the theory of ethical relativism. Some claim that, while the moral practices of societies may differ, the fundamental moral principles underlying these practices do not. This statement is arguable knowing that some moral beliefs are culturally relative whereas others are not. As Wong (1996) stated, "*moral relativists must chart some other more complicated path from the existence of diversity to the conclusion that there is no single true morality*".

Likewise, Harman (2000) stated that "*I will understand a belief about absolute values to be a belief that there are things that everyone has a reason to hope or wish for. To say that there is a moral law that 'applies to everyone' is, I hereby stipulate, to say that everyone has sufficient reasons to follow that law*". This means that, although morals are assumed universal in their basics, the idea that there is a moral absolutism is, therefore, questionable.

The computer industry acts as the medium in such clashes of morality. For instance, implementing a network system that may control work and where, by controlling communication (especially that of the internet access) and by practice, the employees store data (some of which would be personal data) is rightly questionable in the field of ethics.

Some known internet resources like P2P (peer-to-peer network) may be viewed by employees as information resources, which allow users to download information such as MP3 files and some software. Thus it opens the LAN (Local Area Network) to some threats from viruses, degrading the network bandwidth etc.

Blue Coat published research (2004) about the effect and usage of P2P networking. The report shows an astonishing result: 42% of employees use P2P networking in operations such as downloading music and 39% of these use the network for sharing files on the company network.

While P2P networking uses file sharing (some of which is illegal), it is also a potential threat to a network. The survey showed that 30% of the network bandwidth can be consumed by this. In addition, the loss of an employee's productivity is unavoidable.

The question of freedom of information in this instance can be arguable; although it is a matter of basic rights, it can also be considered by organisation decision makers as a loss of productivity and resources.

Some types of internet resources may be used without knowing the possible threats and damage to the organisation network, especially when considering that the organisation's network may hold some sensitive data governed by the Data Protection Act. A data controller (the organisation) should adhere to the right of a data subject to store and control data securely whilst acknowledging that resources such as P2P may open the network to unavoidable security threats.

Conducting research to enable the final project to be implemented globally requires special attention to data protection. Data protection is an area that has not yet been developed to be globally viable; even though it has been active in some countries such as the UK since 1998 (with some amendments), it is clearly absent in other countries around the world.

For this reason (and considering the project's sensitivity), adding the use of third party data (data subject) to the network serving this project should be protected from all types of personal and/ or P2P networks. This can be governed by a network firewall. Nevertheless, as discussed, a routine check is required to audit the network in use.

5.8 Summary

The current process (as described) carries many threats and lacks the consistency of a modern process. Security, availability, mobility and traceability are some of most important features in the new (proposed) process. Additionally, adding the ability to complete a legalised document in one step (one-stop shopping) is, by all measures, a definite advantage.

Recognising the use of modern technology means a change to some of the routines that may have been assumed to be indestructible, such as the manual signature that appears in any document currently legalised even though the introduction of biometric signatures is more secure, fast and easily implemented.

A manual signature (as described) lacks consistency in its appearance and may lose its validity in years to come. It was the only method that could be used in the past. Changing the method of authentication means a change to the manual signature is imminent, adding to the increase in speed and mobility.

The use of stamps in document legalisation should not be assumed to be an integral part of the legalisation process; it was a historical method for collecting revenue and, hence, replacing stamps by integrating serialised documents and databases will reduce costs and enhance security.

Below are shown the steps in the proposed process for legalising a document. Figure 5-24 shows the proposed process steps, whereas Figure 5-25 shows the steps in the current legalisation process.

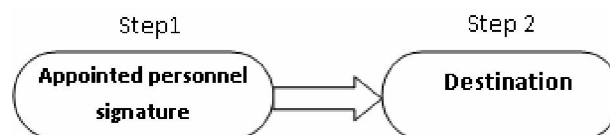


Figure 5-24: Proposed Document Legalisation Steps



Figure 5-25: Current Document Legalisation Steps

In order to demonstrate a comparable operation between the proposed process and the current process, Table 5-13 shows a comparison of the process steps taken to legalise a document:

Current Process	Proposed Process
<ul style="list-style-type: none"> • Embassy/ Consulate <ul style="list-style-type: none"> ○ Affixing a stamp (similar to those used in post office mail), used for financial purposes only ○ Embassy seal ○ Appointed agent's signature • Ministry of Foreign Affairs <ul style="list-style-type: none"> ○ Affixing a stamp (similar to those used in post office mail), used for financial purposes only ○ Ministry seal ○ Appointed agent's signature 	<ul style="list-style-type: none"> • Embassy/ Consulate <ul style="list-style-type: none"> ○ Create a record and affix a record label ○ Appointed agent's signature (digitally signed)

Table 5-13: Comparison Between Current Process and Proposed Process

The potential pitfalls (as described) may be solved by implementing strong protection on all data networks, including a firewall and virus protection system. Having the above advantages usually comes at a cost. The threat of viruses and hackers are potential problems that could affect the network but, again, they are already routinely accounted for in modern network technology. In other words, this will not add any additional overhead costs to the current network infrastructure.

It is, therefore, necessary to protect and secure the legalisation terminal. The computer must, therefore, be behind a firewall that uses filters of both IP and MAC addresses, adding the use of biometric authentication.

Chapter Six

There is no doubt that we are living in a communication revolution. We are already experiencing the impact of everyday changes in the way we are communicating. The huge demand on communications and the diversity of the market indicate the positive impact the development of a better document management system would have.

Conclusions & Recommendations

6 Conclusions & Recommendations

This report is aimed at finding the advantages and disadvantages of implementing a new process in document legalisation. The survey conducted internally and the surveys acquired externally, together with all interviews that were conducted with senior personnel, served to analyse the benefits of changing the legalisation process that was inherited historically. To be satisfied with the data, I identified some cases of implementation of very similar process to support my findings.

The benefits of changing the legacy process are compelling. As with most other valued and beneficial projects, achieving the benefits requires careful preparation and planning. There may be a need for extra security planning, which would be one of the IT Manager's responsibilities. However, the extra overheads for the company's data network bring with them huge benefits of security and productivity.

The innovation of the new process will set a precedence making it the first stepping-stone in eLegalisation. It may be too soon to establish eLegalisation, yet the change will no doubt have the hallmark to encourage decision makers to move forward in the foreseeable future. The application developed, based on "eLegalise", will enhance the organisation's productivity and efficiency to an extent that outweighs the potential pitfalls discussed in Chapter 5.

The new process offers many benefits, including reducing costs by providing an alternative to the high cost of manual services and the errors that may occur with a manual process. The method of implementing the new process may vary between internal deployment and using external service providers.

Assessing and quantifying the business benefits of the newly proposed legalisation process in financial terms will drive us to sub-divide the benefits in terms of intangible return and direct incremental revenue. The newly proposed process enables the business processes to be web-enabled, thus adding an overhead based on security threats while still maintaining very important benefits, such as P2P and availability.

Process security and speed may well be two of the most important features in this project. They can be assessed by comparing the current process and the newly proposed one, based on the findings of this research. To analyse and identify the benefits of the

newly proposed legalisation process, two main factors must be considered. The main factor that has a direct effect on document legalisation is the process itself, while the other the speed of that process. This project, which involves many government departments that hold highly sensitive and diverse information, required in-depth analysis both from security and financial view points.

One of the aims of this project was to review the advantages and disadvantages of the current process, which are apparent when evaluating the current process in comparison with the newly proposed process.

The initial cost of the project may have an impact; however, in the long run this cost can be negligible compared with the benefits and the speed of the process. The process itself costs a great deal of time and money. As currently each and every document needs the work of multiple employees, an analyst is not required to determine that the process drains money. To put cost into perspective and into numerical values, assume that 300 documents arrive each day in one agency alone. Time-consuming processes such as affixing stamps, recording and calculating fees require a minimum of one minute for each document at each stage of the process. Adding to this the time of document transfer between employees (which, as a moderate estimate, may amount to about two minutes each), this comes to $5 \times 300 = 1500$ minutes, or 25 hours, amounting to about three working days. In the internal survey, when asked “*What is the average time taken to legalise a document?*” 46% of respondents believed that the process takes five minutes or less whereas 51% believed it takes more than 10 minutes. Figure 6-1 shows a graphical representation of the survey results.

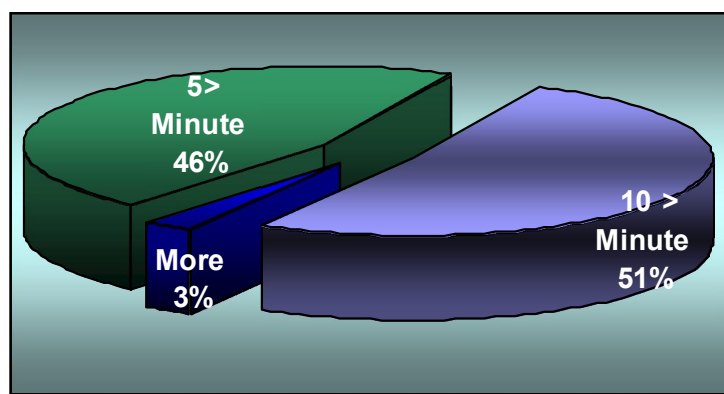


Figure 6-1: Average Time Taken to Legalise a Document. Source: Internal Questionnaire

In comparison, using the new system suggested above, the time required to legalise a document may be reduced to a third of the current time, thus amounting to about three-quarters of a day for the same 300 documents.

With regard to the cost of stamps used, the current process requires affixing stamps to each document legalised. Obviously the stamps used have their value and, therefore, multiple stamps representing the value need to be used. Eliminating the stamps means reducing the cost of printing stamps of different value and type. Additionally, the use of a single label per document means a further reduction in costs.

Even though legalising a document does not mean that the content of a document is accurate, a document still needs to be authenticated and genuinely legalised in the appropriate local MOFA office. Currently, there is a need for an expert or trained personnel to verify the document's signatory and seals. This process takes some time and, therefore, money. If you calculate the amount of work required by a trained person to verify a document (especially if the document was legalised a while ago), it will amount to no less than 4-10 minutes. If we then assume the arrival of 100 documents this means an average time of 700 minutes, i.e. 11 working hours. Figure 6-2 shows the average time taken to legalise a single document.

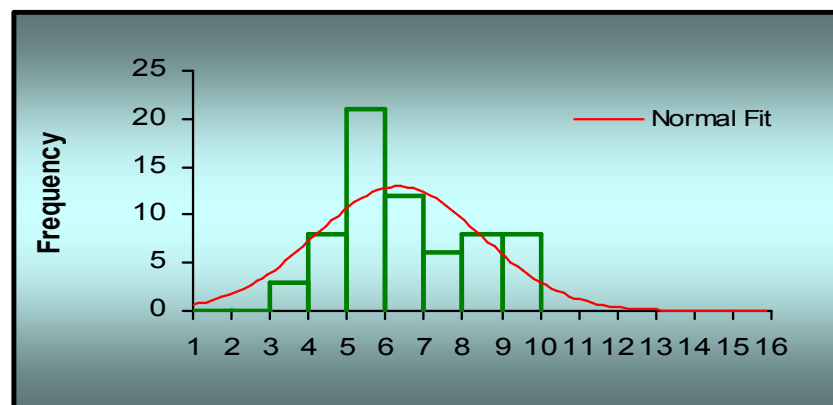


Figure 6-2: Average Time Taken to Legalise a Document. Source: Internal Questionnaire.

The proposed method will eliminate the need for an expert or highly trained personnel and will, therefore, reduce training costs which in turn will reduce the time required to legalise a document as only a barcode scan is needed at the touch of a keyboard button.

The advantages of the new approach to document legalisation are not limited to the context of tangible benefits but will also extend to the intangible such as improvement of future projects that are built upon the new proposed process.

The new process opens the way for business innovation. eLegalisation and online services are some of the important benefits available. These benefits are no longer a luxury but are essential in the Origin Country, which is showing a very fast pace of growth in business activities. The need for the government to compete with business is like never before.

A move towards a new process is not a luxurious choice. It is now the most effective way of communication and collaboration between multi-branch companies. The business sector knows the benefits and has already implemented many operations such as online invoices and eBanking. It is, therefore, not a question of if, but when. In many environments change needs to take place in stages, and this has been taken into account such that changes can be adopted in stages in some areas. The replacement of the manual signature with a biometric signature may be delayed. This was acknowledged by Amb-1, London, who said *“I particularly liked the idea of incorporating the biometric technology instead of the current visual recognition of manual signatures. I believe this will set a critical dialogue in authorising this step. Nevertheless, it is an advantage that the proposed process can be implemented in stages”* (please refer to Appendix E).

Likewise, the Deputy Head of Mission for the United Arab Emirates Embassy, London commented on the superiority of the proposed process over the current one: *“Further, the proposed process suggests measures superior to the current process where: it is recommended to use biometric signatures instead of current manual signatories, hence, minimising human error”*. Thus it can be concluded that even though the use of biometric technology is likely to be accepted, when this feature is required it will be adopted at the relevant stage.

The Amb-1 concluded that *“Your proposed process may have overcome and solved the weakness of the current system in many areas some of which are very critical e.g. security and document traceability”*. This was an acknowledgment that the main concern raised and the solution provided was one of the main concerns of decision makers.

For any project to achieve success both political and leadership support are required. The Deputy Head of Mission acknowledged that “*One crucial precondition is securing the political commitment and leadership at the highest level possible, and having a clear understanding of any implications when undertaking the task of introducing a new methodology*”. This research provides a complete overview of the current process and, hence, clarifies the impact and implications of the project in detail.

The reviews above (in addition to the data analysis and the interviews that were conducted) show the critical areas of concern for stakeholders and adds to the discussion in Chapter 5, where the findings showed a lack of security, availability, mobility and traceability in the current legalisation process. Hence, the assumption is that this process should be reviewed and that change is the way forward.

6.1 The Process of Change

There is no doubt that change in any organisation needs careful planning and should also meet any preconditions that allow the decision makers to initiate the necessary process of change.

Stakeholders are usually critical when considering change, as many variables need to be considered before a decision to make changes is accepted. Some of these variables are linked to the financial benefits and/ or other benefits of implementing the project.

The first step in planning a successful change is clarifying the reasons for the change. Lewin (1958) stated that “*Motivation for change must be generated before change can occur. One must be helped to re-examine many cherished assumptions about oneself and one’s relations to others*”. As such Lewin established three stages in change: “*Unfreeze, Change, Refreeze*”.

6.1.1 Unfreeze

The first stage (by all measures) is the key stage for change. This is when the reasons should be analysed and developed, and compelling evidence for the call for change should be provided. This stage should, in other words, challenge the work (the current process) by defining the problems and why they cannot continue.

Furthermore, the need for change is very apparent and expressed in the review of the Amb-1, London, who acknowledged that *“The need to change has always been one criteria that the UAE Government has been looking into”* (please refer to Appendix E). This shows that, in principle, there is an acceptance of change, however, there has not been a *“clear”* and *“secured”* proposal.

Similarly, the Deputy Head of Mission acknowledged that *“In my opinion, a new process that is more efficient and effective than the current process should be considered”* (please refer to Appendix E), showing the tone of the need to change. This reflects on decision makers when considering change.

The barrier for change, therefore, is not in the understanding or recognition of the need to change, but in the availability of research and a clear proposal which identifies the problems and the risks involved in the current process and provides a coherent solution.

6.1.2 Change

According to Lewin’s theory, the organisation’s decision makers/ stakeholders need to understand and believe and, thereafter, act on the change process. Even so, change may take some time. The need to change (unfreeze – as described above) is assumed to be one criterion that the organisation is *“looking into”*. Amb-1 stated, *“yet a clear and secured option, such as this research you have conducted, is new and holds all the marks of success”*. This statement falls in line with the Deputy Head of Mission who stated that *“I see that this proposal has the necessary facets to take the legalisation process to the next level”* (please refer to Appendix E).

The critical review of the topic in this report (in relation to the legacy of document legalisation from a historical point of view, and also the changes that have taken place in many countries around the world) was based on a set of objectives which discussed the advantages and disadvantages of the newly proposed system and the old ‘historical’ process. Looking at the system from a different approach – an economical point of view – the proposed process can be seen as more cost-effective in addition to bringing other benefits discussed earlier, such as security, productivity and traceability.

A business improvement can easily be seen through the implementation of the new process. From the example discussed in Chapter 5 and due to the nature of our organisation's business, change is inevitable. Furthermore, this type of technology would not be limited to this application but future changes based on this application may also be developed, such as "eLegalise".

Looking at the advantages must not blind us to the risks of implementing such a critical business component based on the internet, which is known to be the host of a vast number of security threats. All applications based on the internet are vulnerable to several well-known security threats – denial of service attacks and viruses are some of the security threats inherited from the internet.

To conclude, the need to establish an up-to-date network of communication whilst building a solid base for future expansion (adding the benefits of business application and cost reduction) is paramount. Make no mistake; a move towards a new and more secure document legalisation process would be a distinctive business advantage.

Considering the above critical discussion and looking at the main benefits and pitfalls associated with the current legalisation process, there is a price associated with implementing this technology. Weighing up the advantages and disadvantages of the new process against the requirements of the company is a difficult task.

6.1.3 Refreeze

This step, according to Lewin's theory, is the future of the project. It is the implementation stage for which a study of the report will establish the logistics. Amb-1 acknowledged that "*After considering all the benefits your proposed process gives over the current process, it seems wise to consider a change. Nevertheless, more review by a government committee needs to address the practical terms in logistical relations and implementation levels*".

The importance to act on this project and initiate a proper channel of discussion with all relevant parties is quite apparent. From the viewpoint of security and the indicated benefits that this document has raised, implementing the recommended process would enable secure transactions which can be stored and later retrieved in real time.

Some of the disadvantages discussed above, such as viruses and denial of service attacks, are already considerations for the organisation's data network and, therefore, implementing this project would not add any extra weight. However, engaging the organisation in a large scale project, with an impact that may affect the organisation's communication structure, needs extra thought and consideration.

It is clear from the above discussion that the benefits of automated document legalisation are compelling and undeniable, but achieving these benefits would not be without cost and would require careful preparation. Many of the benefits would help reduce the total cost, some of which may well be distributed over more than one year. Intangible benefits such as customer satisfaction and staff mobility are other important factors by which to gauge efficiency and productivity.

Communication is the backbone of any organisation and the available forms of communication have changed dramatically in the last decade. Since the mid-1990s, after the internet established itself in every corner of large and small business, the use of this phenomenon has been seen as an exciting technological development and highly possible by technology experts.

The challenge which lay ahead, therefore, was how to migrate from the existing historical process, which lacks security, productivity and mobility, with minimal cost and operational disruption. In this report, discussions and considerations have taken place on how to renew the process in the most modern and effective way.

Implementing this type of project would need consideration of many variables before planning and implementation take place, some of which have a huge impact on network security.

This project is not only a replacement of the historical document legalisation process that dates back in history, but it is also an enhancement to business communication both locally and globally. The complexity of the project would be manageable using fully incorporated secure administration but would need constant monitoring and verification.

To summarise in a single statement: cost reduction, improved productivity, enhanced security and increased staff collaboration are some of the tangible business benefits of the newly proposed process. Measuring all improvements to business and quantifying the

benefits of staff collaboration may identify other benefits that can add to the return of the investment.

6.2 Recommendations

Automating document legalisation is a feasible alternative to the traditional and historical method used in this business. The move towards the new process is apparent in similar business activities. As the system currently lacks security, productivity, availability and traceability, implementing the new process will clear away the pitfalls that have been drawbacks in this business for so many years.

Migrating from the traditional/ historical process is not a task that can take place in a year or two. If change takes place in stages, preparing the main-office (headquarters) network infrastructure is essential. Choosing internet service providers across the world (depending on the geographical area of the branch) and preparing the branch network are other tasks.

One of the biggest questions in change management is whether to convert the existing system to a fully computerised system or work in a transition period. It should not be forgotten that the enterprise network is live and running and any disturbance may result in an unwanted problems.

Bearing in mind all of the functionality required by the organisation (and the bandwidth required), an awareness of the potential issues associated with the deployment of change must also be considered.

6.2.1 Professional impact

The above description and the findings of the project evaluate the current process of document legalisation and suggest the need to change. However, the project set a new approach to document legalisation while at the same time investigating a subject that was neglected by researchers. The project can, therefore, be assumed to be the first research project exploring this subject.

Academically, the project can be referenced by other researchers investigating this subject and exploring the changes that took place in history. I think that even though this topic had not been explored, the evaluation of the current process and the suggested new

approach to the document legalisation process using enterprise network technology may set a precedent for other researchers investigating this subject.

The lack of traceability, availability and security in the current process been avoided in the proposed process. This will have an impact on both speed and reliability for all stakeholders in the organisation.

Currently all GCC (Gulf Cooperation Council) countries use the same process and hence a change in the UAE may have an impact on the other GCC countries, for which future research should, therefore, concentrate on e-legalisation.

6.2.1.1 UAE as an Origin Country

The proposed process will help other countries enquire about the authenticity of any document legalised by the UAE Foreign Ministry online, i.e. other countries may use the proposed facility to authenticate document legalisation by the UAE.

The system, as it stands, has no means of verifying documents without returning the document to the main branch unless the visual appearance of the document is sufficient and, as discussed, is proved false.

Traceability is one absent factor in the current process. Implementing a computerised process will enable better security (in authentication) because all documents can be traced. A quick and easy way of checking the status of any document means that other parties can check the status remotely.

Due to the traceability features in the new proposed process, a document issued in the UAE may be authenticated online, and hence the validity of the document may even be confirmed by the border control. However, even though this feature is possible it will only be used in extreme circumstances such as loss of passports.

If a similar method is used in other countries then it would be possible to eliminate the need for the agent to countersign a document, as the customer would enter details of a document, the system would confirm the authenticity of the document and an e-legalisation would be issued.

The process of document legalisation will greatly be enhanced; recipients of the document can verify and authenticate the document online, thus reducing time and effort and hence money. There will no longer be a requirement to verify the document visually, a feature that can be of benefit not only to the UAE as a country and the stakeholders, but also to other countries as well as users in any government department.

6.2.1.2 eLegalise

The newly proposed process of document legalisation is designed to be suitable for future enhancement, such as using with “eLegalise”, where a customer may be able to legalise certain documents online.

It may be possible to legalise documents such as birth certificates (which the customer has already had certified by the Foreign Ministry of the Origin Country) using eLegalise. The only drawback at the moment is that currently the agent certifies that the seal and stamps on the document are approved. Using eLegalise means that the customer is responsible for this and so the document may be refused by the Destination Country (UAE).

Another restriction that eLegalise cannot implement for the time being is that the document must be signed by the agents. This means that the document cannot be authenticated except by a physical signature.

Currently some origin countries have methods and numbering systems which, in the future, could enquire if the document is genuinely certified. Until this method is globalised, the method of eLegalisation is only an idea that could potentially be implemented in the future.

6.2.2 Bespoke Software & Partnership

Looking at the project as it stands, there are no off-the-shelf packages that can satisfy the business processes. In this particular project the only solution is to build a new system and the only practical way of doing this is to consider a bespoke software solution. The bespoke software would have to be designed with the organisation's needs in mind. Bespoke software usually does not need licence fees and, therefore, support is arranged to suit needs and requirements. The other solution is to design and implement the software in-house – this requires a team of professionals and ongoing support.

Implementing the project in-house may result in allocating resources to a limit that can affect daily work and support. On the other hand, bespoke (third party) software providers may not have sufficient experience of the legalisation process.

The other solution is to manage a partnership (outsourcing) such that the system would be implemented in partnership with the organisation and the organisation would supply the process concept and methodology for the flow of documents.

To develop a sound and reliable software that suits the business, because the business processes are already in use, it is difficult for the developer to quantify and design the system without a partnership from the organisation (MOFA). The business uses a diverse range of processes due to the different environments and processes in the different branches (embassies/ consulates), and so the concept as it stands is not of a business standard.

To establish the partnership, the organisation may need to arrange for some expert staff to monitor and give advice to the developers in order to design the system in the most appropriate way.

Choosing service providers requires careful consideration of their track record, reputation, quality of services and reliability. In addition, the security consideration must not be left out of the decision maker's formulae.

On the other hand, if a decision is made to manage and deploy an in-house network, an upfront cost such as buying and/ or upgrading equipment may have to be incurred.

Adding a training cost and/ or employing extra IT staff would be a necessity. In either case the decision would affect the total cost of ownership (TCO).

There are a set of points to take into account when choosing between in-house deployment and external service providers. These points will only be a broad banner. After all, the organisation's strategic planning will affect the decision. The following are some of these considerations:

- Evaluate the ability of IT staff and any training required. If you can rely on the IT staff to maintain the network and software, an in-house service may be appropriate.
- Consider the geographical area (the country), i.e. if a sound service provider is available. If a suitable provider is not available, then owning the system is a wise move.
- Multi-WAN Connectivity must be put in place. This will help with both backup connectivity and bandwidth utilisation.

Reflection

One of the unique characteristics of human beings is the ability to apprehend reality through a process of analysis and synthesis of observable phenomena. It is this characteristic (based on the human mind) that makes humans unique in extending knowledge. It is the ability to organise perceptual information into concepts.

Critical Reflection

7 Reflection

Over the past three years, and since starting the DProf, the process of preparing and collecting information for the RAL and preparing the portfolio all contributed towards the project report preparation. The amount of materials that I have researched, together with the literature in the DPS4561 handbooks, has impacted on my research at a philosophical level as it was not a task with which I was accustomed.

The huge amount of literature I have analysed, together with the alignment of the research proposal to fall in line with the philosophical assumption of the project, opened up my horizons and established the real impact of what drives me to read and learn in so many areas of my profession.

Progressing from the very first basic element of knowledge, the philosophical assumption of knowledge, to the final research proposal involves many tasks. I can assume that if it was not part of the module I would not have touched on these subjects at all, especially when considering the profession (IT) and the material that I needed to be aware of which involves practical technology – itself far from philosophy.

I now recognise the importance of this element of knowledge and the impact that this area of learning has had in changing my conceptual understanding of research. I should point out that, even at my Masters level of study, I did not have to learn, nor was I required to go into this subject, at this detailed level.

Looking back and reading the research I carried out for my Masters, I can see the difference and the impact of what I have learned. The Masters research now seems to me as being very naïve compared with my new research. I think that this practice established a coherence of knowledge and I believe that my perception of research has changed significantly.

On the subject of research methods, I think that I have learnt to develop an idea that identifies and challenges assumptions as well as giving me ideas for solutions to overcome self-bias, which I think is one of the key issues in dealing with ever increasing information, especially in this subject where information never stops changing. This also applies to whatever evidence and reports I may be confronted with.

It is quite obvious that any learning and experience a person has will influence their day-to-day work, provided that anything learnt and any information gained is transferable, relevant and feasible in the workplace. I felt that the course of preparing the research proposal report was a step forward in the learning curve due to the nature of work-based learning, which focuses directly on each individual's work, practice and activities. In fact, it gave me (the learner) a full self-review and the ability to apply what I learn and put it into practice. The effectiveness of transferring the learnt information and/ or applying the knowledge will lay in the method, the opportunity and the position I hold.

On the other hand, quantifying learning is a difficult task as it is an intangible mix of observation, subjective knowledge and interaction with theory and practice. Nonetheless, self-reflection can help to quantify learning, but this reflection can be assumed to be subjective knowledge.

Seeking feedback on my performance to identify strengths and weaknesses and also to enable myself to adapt to the demands of changing situations (especially when considering my position as an inside researcher) are other ways to quantify learning.

It appears to me that some of the material I have analysed in the learning process is designed to develop critical and problem-solving skills through reflective practices. Kolb (1984) stated that "*Learning is the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping experience and transforming it*". Self-reflection can help to quantify learning as learning is a mix of observation, interaction, theory and practice.

To some extent, this statement falls in line with Dewey (1963) in his proposed argument saying that, "*In what I have said I have taken for granted the soundness of the principle that education in order to accomplish its ends both for the individual learner and for society must be based upon experience--which is always the actual life-experience of some individual*". He falls short by assuming that this root is the only method of education recognising traditional education in saying that, "*The belief that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative. Experience and education cannot be directly equated to each other*". I do think that experience of that type of knowledge can be paired with traditional education to form a concrete and coherent form of knowledge.

Daines (1992) observed that “*Adults learn from problems rather than from subjects*”. This was certainly the case in my work experience. Dealing with the problems within my work and critically analysing the data put me on the course of learning to use different methods in analysing the data. Furthermore, the responses to questionnaires can be ambiguous but along the data collected from archives provided links to all the relevant information I needed.

Nonaka (2001) stated that “*Knowledge is created through a continuous and dynamic interaction between tacit and explicit knowledge*”. Tacit knowledge may be defined in some instances as experience.

The experience of my final project in work-based studies (where I have learnt so many methods to authenticate, analyse and apply research methodology) has given me the ability to write the project in an academic style whilst adding an ethical consideration and looking at the project in more detailed subjects.

To obtain the materials for learning is an easy task, yet to use this knowledge in practice is quite another matter. As Dewey (1997) acknowledged “*finding the material for learning within experience is only the first step. The next step is the progressive development of what is already experienced into a fuller and richer and also more organized form*”.

I have recorded, examined and challenged the theory topics I read in text books and then evaluated and synthesised the results. Again, reflecting back, this was a routine effort in this research. I, therefore, assume that this change is a result of what I have learnt doing this report, consequently affecting the process of my work which in turn improves my work practice.

7.1 ***Reflexivity***

Accounting for a journey in research may be interrelated to the subject studied and hence a relationship is created which, in some cases, is insuperable. It is this that Bohm (1996, p.69) referred to as "*But this 'observer' profoundly affects what it is observing, and is also affected by what it is observing — there is really very little separation between them*". However, this insuperable bond can be seen at an epistemological level as the creation of knowledge.

For this I have to look at my self-awareness of the contribution made to the subject whilst, on the other hand, looking at the impact of this research on my awareness and knowledge. The latter may not only have an impact on me in this particular subject, but may extend to my overall thoughts and perception in many areas such as life, knowledge, perception etc.

Personally, I think that the very basic elements of knowledge and how knowledge is created have changed my perception in conducting research. The experiences established through researching this subject very much fall in line with the critical views of the researcher in the composition of knowledge. This may have impacted on my perception of what I read or heard and the reasoning for my decisions.

The impact on my personal knowledge may have influenced me to develop an interest in conducting more research into many other areas of research. It may be that the topic I chose and its relationship with the social aspect enhanced my observation and questioning skills, which was not high on my agenda before.

I may also divide my learning outcome in this research into two categories. Reflexivity is, therefore, divided into two main areas: the impact on my personal development and the impact on the subject researched and/ or the transfer of learning.

7.2 *Transfer of Learning to the Workplace*

“Where people continually expand their capability to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to learn together.”

[Senge, 1990]

Transfer of learning is one of most important factors behind training or learning if they are to be effective and give the learner the ability to apply what has been learnt in the workplace.

Personally, I found myself motivated to put the theory and experience I had learnt into practice wherever possible, and to monitor the outcome which then gave me the incentive to fine-tune the process and then master the perfection of the work.

Transfer of learning is one of key concepts in adult learning. The importance of learning is only viable if it is transferred to the workplace. After all, the context of learning is not the ultimate goal if it cannot be applied in real life.

The reality of the transfer of learning is not as clear-cut as it may seem. As Perkins & Salomon (1996) argued, the transfer of learning *“is actually a multi-faceted phenomena of at least two distinct mechanisms”*. Therefore, one must analyse the fact that there are two mechanisms – the low road and the high road. What is understood in this argument is that the idea of transferring learning or training to the workplace is not the same as when transferring a piece of equipment.

After all, transferring learning into the work place needs skill and time. It is complex as it involves so many variables, e.g. the relevance of knowledge, as recognition of this knowledge is relevant to the situation or possibly even other situations. It is also important to note that some of the learned skills may be mixed and matched according to the needs – this recognises that knowledge is not a piece of information that can be fitted anywhere at any time.

The acquisition of knowledge or a skill does not ensure that this skill or the knowledge will be transferred appropriately or applied to relevant and appropriate situations. Therefore, the ability to transfer knowledge at the appropriate and right time is important. On the other hand, knowledge that is not applicable to be transferred may be

equally as useful and hence create a cloud of knowledge which can be fine-tuned to suit an appropriate area of work. Dixon (1994) acknowledged this by saying “*The essence of organisational learning is the organization's ability to use the amazing mental capacity of all its members to create the kind of processes that will improve its own*”.

Of course, I also developed skills such as being more aware of ethical issues. I also needed to develop other skills such as how to take responsibility for meeting my own learning and development needs, to seek feedback on my performance, to identify strengths and weaknesses, and also to develop myself to adapt to the demands of changing situations.

Evaluating the transfer of learning is complex. It is also difficult to measure; although feedback is one way of measuring learning, this type of measurement may not necessarily form a real means of transfer to the workplace. A follow-up and self-reflection of the transfer of learning in conjunction with feedback could be a better way to analyse performance.

In this case, I regularly reflected back on past reports. The very obvious change from my first report to the coherence in the latter one concludes the impact of what I have learned between writing the two reports. As such, I found that the achievement of the improvements between my earlier and current academic work was paramount.

This was one of the most important reasons that drove me to complete the DProf study – the ability to evaluate and synthesise what I have done earlier and what I am doing currently, where the improvement is clearly shown both academically and in practice.

Choosing a subject that has been covered in very little previous literature may have impacted both on me and on the progress on the research, especially in Chapter 2 (Literature Review). The literature in this subject can be assumed to be next to none and I needed to analyse and synthesise findings without examples from other observers /researchers, which proved to be difficult. However, in my opinion, this difficulty may have added to my keenness to research the subject in order to provide some original work and hence a contribution to knowledge.

Document legalisation (as described in Chapter 2) is not new, nor is its use by a small community. However, the absence of, or the limited amount of, literature available in this subject added a huge difficulty to my work.

In order to compensate for the shortage in literature/ research in this subject and according to my research approach and methodology (as described in Chapter 3), especially when triangulating data and findings, I resorted to archived literature that could be used to triangulate the data – books such as “*A History of Taxation and Taxes in England: From the Earliest Times to the Year 1885*” by Dowell, published in 1888 gave some insight into elements of this subject.

Due to the nature of this subject and its links to history and taxation, archives can be a valuable source for finding reasons behind some activities and process steps. I found that “*Principles and Methods of Taxation*” by Armitage-Smith, published in 1907, was a good archive source.

The search for archives in this subject is vital as finding reasons for the process, knowing that this process was created in history and that the knowledge was composed and passed from one person to another, may require verification.

This area of research may be the most influential on my work. It is recognised by critical researchers, and is also apparent in many areas of our social life, that in many subjects the volume of literature reflects the attention given to the subjects by scholars/ researchers and/ or the age of the subject. Document legalisation goes back in history to the Roman Empire and the daily business attached to it that can be assumed to be routine is used by many establishments and personnel who deal with foreign governments. To my amusement, very little literature has previously been written in this field.

7.3 ***The Impact***

“We have entered the Knowledge Age and the new currency is learning. Knowledge is the result of learning and is ephemeral, constantly needing to be revised and updated. Learning is ‘sense making’: it is the process that leads to knowledge.”

(Dixon, 1994)

From all the reading and the experience of finalising my work and preparing the project report, I can ensure that the operational process will be enhanced and improved. This required a continuous process of analysing the progress of the work. It is also important to compare the findings with other reports which I think is vital to secure a valid conclusion and to overcome the obscurity of self-bias. This is exactly what I have implemented in my research, as collecting relevant data and analysing it is not sufficient to draw conclusions as sometimes self-bias can influence the work. Therefore, the processes of synthesis and triangulation are two of the methods that I learnt and implemented. This helped me to effectively produce a favourable outcome that would benefit not only the employer's needs but also my work in the future.

The impact of this project may have changed my point of view in that I think I will continue in the research arena. There are areas which now interest me in respect of future research. It is true that some of these areas (subjects) may be far from my profession, yet it can no longer be assumed that I will accept what is written and/ or thought to be absolute.

I think that this level of research and the contribution of knowledge may not only enhance my performance in work and practice but has also made me more alert and critical in many dimensions of work, which may extend to life and behaviour. I shall, therefore, enhance and practice research to satisfy my eagerness to explore and gain more knowledge. This very much reflects Dixon (1994) who acknowledged that *“Knowledge is the result of learning and is ephemeral, constantly needing to be revised and updated. Learning is ‘sense making’: it is the process that leads to knowledge”*.

7.3.1 Mapping on Kolb's Cycle of Learning

Even though it is difficult to reflect and quantify self-learning, with the help of the theoretical knowledge, particularly reflecting on Kolb's Cycle of Learning (1984), and by mapping the theoretical knowledge on my practical and ongoing learning I can summarise the findings in basic mapping as in the following graphical representation.

Figure 8-1 shows the early learning development as I see it, including how the lack of methodology and absence of theory impacted on my development. The lack of knowledge and guidance in this work may have impacted and limited my previous learning.

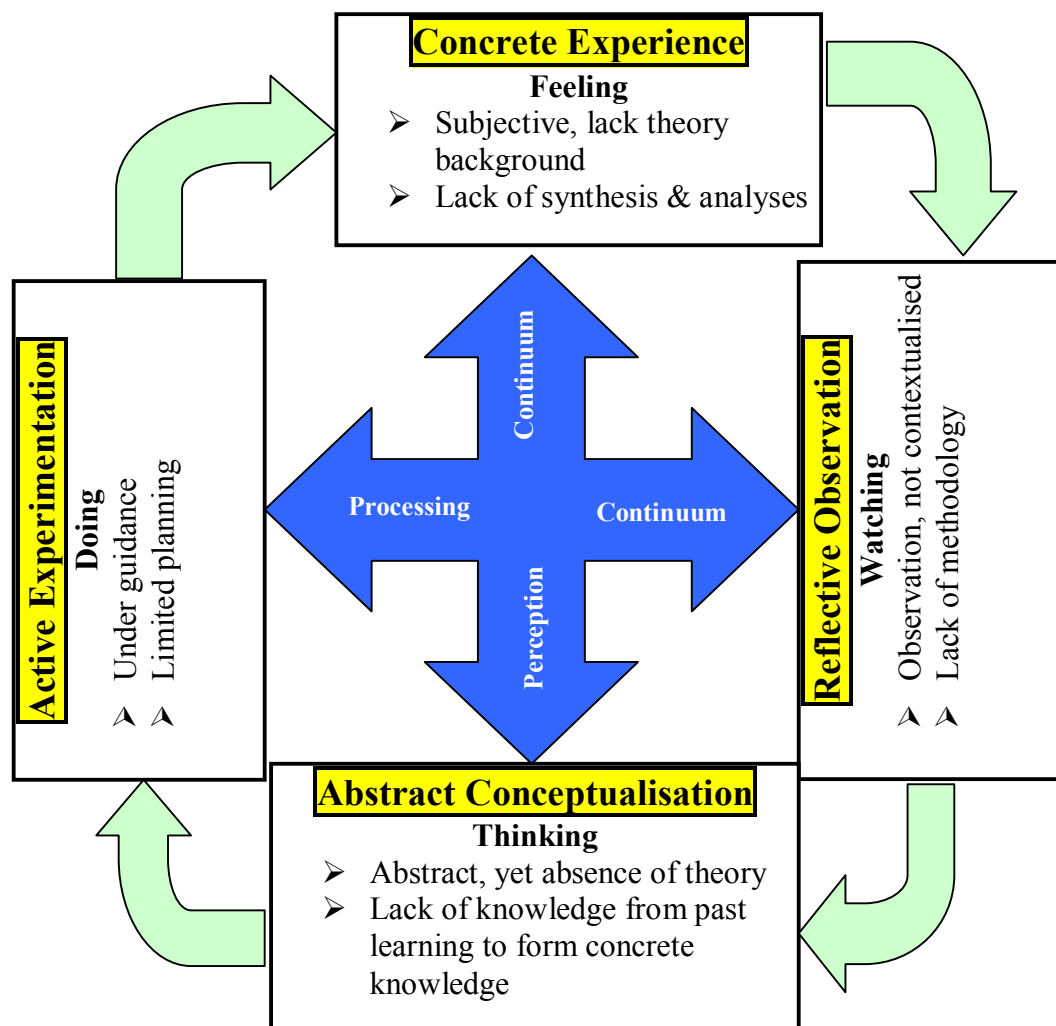


Figure 7-1: Kolb's Cycle of Learning (1984) Mapped to Represent Knowledge Development in Early Years

As a comparison, and to show the improvement in my learning and the impact of my study at Middlesex University (in particular my Masters and now my DProf), I have summarised the findings as shown in Figure 8-2. This shows the enhancement of my learning capability, autonomous working, conceptualisation of findings and observation. My theoretical knowledge, synthesis and analysis of past learning has had the impact of developing a concrete knowledge which I can assume has been formed by multiple rounds of the cycle:

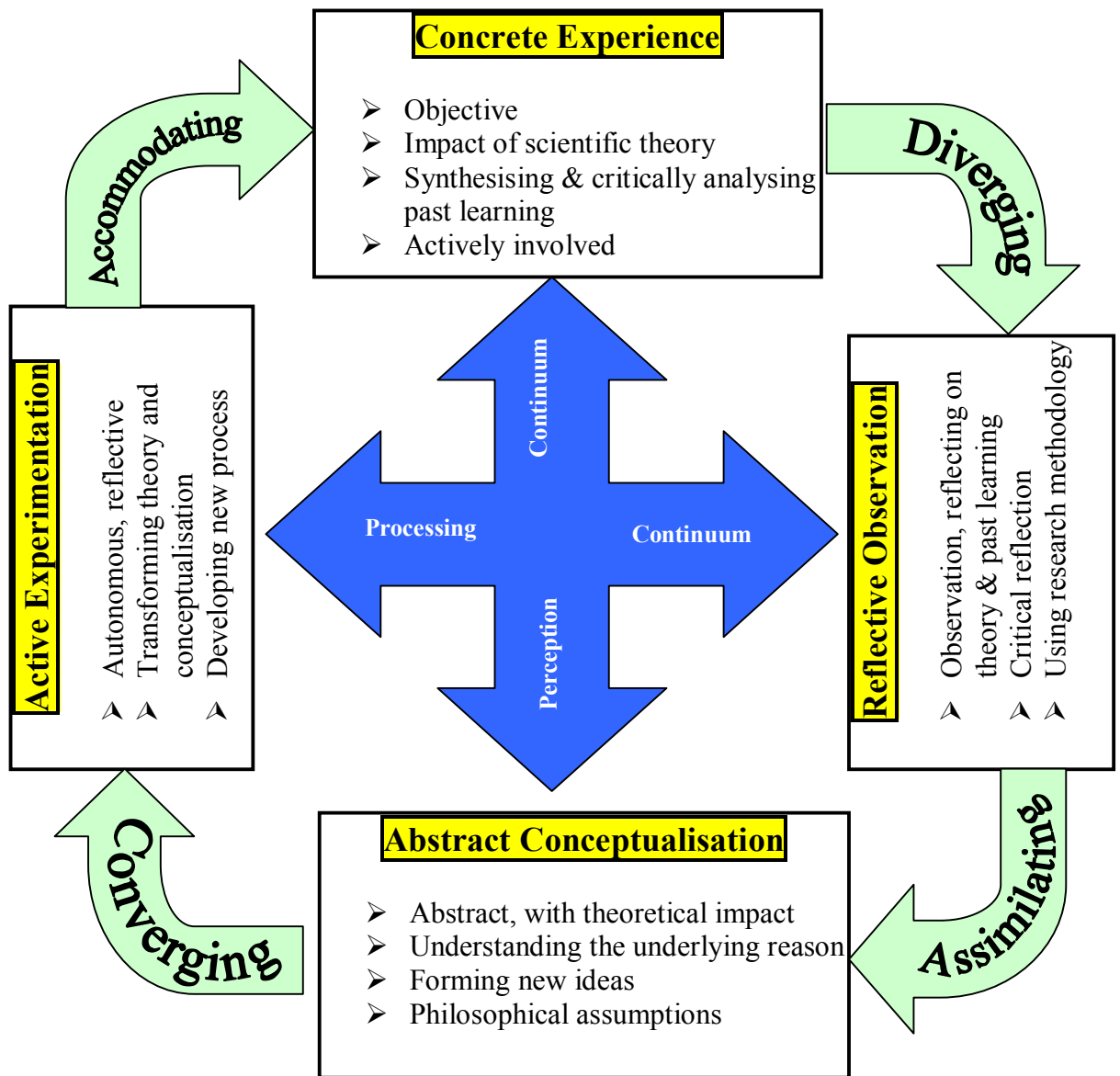


Figure 7-2: Kolb's Cycle of Learning (1984) Mapped to Represent Knowledge Development at Later Stage

The impact of my learning over the past three years is quite apparent in my work process. This shows the effect of my learning as I have gradually gained knowledge, with this knowledge being reflected in the method of research I used. In addition this knowledge has been applied to enhance the accuracy of the product and findings.

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Appendices

Appendix A: Index of Tables & Figures

Index of Figures

Figure 1-1: Document Legalisation Steps	3
Figure 2-1: Activity of Kuwait Mall (first three weeks activity). Source: Yearly Report 2006, Kuwait.	13
Figure 2-2: Security Breaches Survey 2010. Source: PricewaterhouseCoopers (2010)	20
Figure 2-3: Threat Attacks in 2010 and 2008. Source: PricewaterhouseCoopers (2010)	20
Figure 2-4: Graphical Representation of Threats Sources. Source: Maple (2010).	21
Figure 3-1: Duck/Rabbit (modified). Source: Chase, B. Wrenn (2009)	42
Figure 3-2: Duck /Rabbit (modified). Source: Chase, B. Wrenn (2009)	43
Figure 3-3: Category of Project Failure. Source: Dynamic Markets Limited (2007)	50
Figure 3-4: Research Cycle	53
Figure 4-1: Descriptive Statistical Analysis. Source: internal questionnaire	65
Figure 4-2: Normal Distribution & Cumulative Probability. Source: internal questionnaire	66
Figure 5-1: Document Legalisation Steps	83
Figure 5-2: Result of Interviews on the Agreement to Ignore Step 2,	86
Figure 5-3: Interviewees Response on Stamp Purpose	93
Figure 5-4: Responses for the Integrity of Document Legalised. Source: Internal Questionnaire	93
Figure 5-15: Ability to Trace Past Legalised Documents. Source: Internal Questionnaire.	95
Figure 5-16: Method Used to Trace Documents. Source: Internal Questionnaire	95
Figure 5-5: Illustration of Security Implant on the Label	102
Figure 5-6: 1D Barcode	104
Figure 5-7: 2D Barcode	104
Figure 5-8: Barcode Characteristics	106
Figure 5-9: Sample Label	107
Figure 5-10: The Rising Trend of Legalisation Services. Source: Internal Questionnaire.	109
Figure 5-11: Trend of Attack on Hosted Environment. Source: Maple (2010)	111
Figure 5-12: VPN Connectivity	112
Figure 5-13: Dialup Connectivity	112
Figure 5-14: Multi-WAN Broadband Gateway	113
Figure 5-17 : Mobility Contributes to Organisation Objectives	119
Figure 5-18: Frequency of Internet Shopping Used. Source: Internal Questionnaire.	119
Figure 5-19: Internet Banking Rating (1-5). Source: Internal Questionnaire.	120
Figure 5-20: Vulnerability Leading to Data Compromise. – Source: Maple (2010)	122
Figure 5-21: Network Protection	124
Figure 5-22: Attack Mitigation. Source: Miercom Power Secure Enforcer (May, 2003)	124
Figure 5-23: Security Circles Around Computer used for Document Legalisation	125
Figure 5-24: Proposed Document Legalisation Steps	131
Figure 5-25: Current Document Legalisation Steps	131
Figure 6-1: Average Time Taken to Legalise a Document. Source: Internal Questionnaire	135
Figure 6-2: Average Time Taken to Legalise a Document. Source: Internal Questionnaire.	136
Figure 8-1: Kolb's Cycle of Learning (1984) Mapped to Represent Knowledge Development in Early Years	157
Figure 8-2: Kolb's Cycle of Learning (1984) Mapped to Represent Knowledge Development at Later Stage	158

Index of Tables

<i>Table 2-1: Some Recorded Events of Data Loss</i>	18
<i>Table 3-1: Articles Classified by Epistemology. Source: Orlikowski & Baroudi (1991)</i>	37
<i>Table 3-2: Articles Classified by Epistemology. Source: Pratt et al. (2005)</i>	37
<i>Table 3-3: Classification Criteria of Theoretical Perspectives . Source: Pratt et al (2005)</i>	38
<i>Table 3-4: People's Own Experiences of their Interview. Source: Graham et al. (2007)</i>	48
<i>Table 4-1: Data analysis and triangulation</i>	77
<i>Table 5-1: Categories of Documents Associated with Business Activities</i>	87
<i>Table 5-2: Commercial Invoices and Categories of Legalisation Fees</i>	87
<i>Table 5-3: Categories of Documents Associated with Private/ Personal Requests</i>	88
<i>Table 5-4: Type of Document and Value of Legalisation Fee</i>	88
<i>Table 5-5: Formula Representation for Invoices Higher than 2 Million Dirham</i>	89
<i>Table 5-6: Illustration of Automatic Calculation of Fees</i>	89
<i>Table 5-7: The Product of the Formula</i>	90
<i>Table 5-8: Total Revenue from Stamp Duty. Source: Armitage-Smith (1907)</i>	91
<i>Table 5-9: Comparison between Current Process and Proposed Process</i>	99
<i>Table 5-10: Security features that may be used.</i>	101
<i>Table 5-11: Document Numbering,</i>	103
<i>Table 5-12: Transactions of Documents Legalised in 2002 - 2009</i>	109
<i>Table 5-13: Comparison Between Current Process and Proposed Process</i>	132

Appendix B: Data Protection

Country	Is it necessary to obtain consent before processing personal data, or are alternatives available even when obtaining consent would not be impracticable or inappropriate?	Does the Data Protection Legislation cover the deceased?	Who is able to indirectly identify the data subject?
AUSTRALIA	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	The Australian Act refers to "natural persons".	This is not mentioned in the Australian Act.
AUSTRIA	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	The legislation uses the term "natural person" (s4(3)) but it is unlikely that this will be interpreted to include the deceased. In Austrian law, the legal capacity of a natural person ends with death.	Anybody
BELGIUM	It is always necessary to obtain consent unless it is impracticable or inappropriate according to Article 20 of the Royal Decree of February 13 2001.	Article 2 of the law refers to every 'natural person' in order to exclude 'legal' persons from the field of application. No conclusion can be derived as to the application of the law regarding a dead 'natural person'.	Anybody
BULGARIA	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	No	Probably anybody
CANADA	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	Section 2(1) of PIPEDA states that 'personal health information' is information about 'living or deceased' individuals whilst 'personal information' is information about an identifiable individual. Section 3(m) of the Privacy Act 1980 states that 'personal information' does not include information about an individual who has been dead for more than 20 years.	This is not mentioned in the Canadian legislation.
CYPRUS	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to	No	Anybody

Country	Is it necessary to obtain consent before processing personal data, or are alternatives available even when obtaining consent would not be impracticable or inappropriate?	Does the Data Protection Legislation cover the deceased?	Who is able to indirectly identify the data subject?
	obtain it.		
CZECH REPUBLIC	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	Yes	Anybody
ESTONIA	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it. However, there may be consent requirements in other laws.	Yes – consent is valid for up to 30 years after the data subject's death. Close relatives can also give consent for the data of their deceased family member to be processed.	Anybody
FINLAND	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it. However medical research always requires consent (See Act no. 488/1999).	Only indirectly, in cases where the sensitive data of the dead may affect the surviving relatives.	Anybody
FRANCE	It is probably necessary to get consent when is not impracticable or inappropriate.	No. In French law, the notion of ‘physical persons’ only concerns living persons.	Anybody
GERMANY	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	No, although each of the Lander is entitled to extend it in their regional legislation if they wish.	Anybody
GREECE	It is probably necessary to get consent when is not impracticable or inappropriate, unless in "exceptional" circumstances. See Article 5 of Law no. 2472/97.	No	Anybody

Country	Is it necessary to obtain consent before processing personal data, or are alternatives available even when obtaining consent would not be impracticable or inappropriate?	Does the Data Protection Legislation cover the deceased?	Who is able to indirectly identify the data subject?
GUERNSEY	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	No	As the 2001 Guernsey law is a close copy of the UK law, only the data controller can indirectly identify the data subject.
HUNGARY	It is probably necessary to get consent when it is not impracticable or inappropriate.	No, but other laws in the health sector provide some protection.	Anybody
ICELAND	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it. See Article 8 of the 2000 law.	Yes	Anybody
IRELAND	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	No	Anybody
ITALY	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	Rights may be exercised by any person having an interest in them, so a deceased person's data is covered. On this basis, relatives of the deceased can access the deceased's data.	Anybody
LATVIA	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	Yes, in limited circumstances, for example genetic research.	Anybody

Country	Is it necessary to obtain consent before processing personal data, or are alternatives available even when obtaining consent would not be impracticable or inappropriate?	Does the Data Protection Legislation cover the deceased?	Who is able to indirectly identify the data subject?
LITHUANIA	It is probably necessary to get consent when is not impracticable or inappropriate.	No, but other law's extend protection to the deceased. Article 2.3 of the Civil Code states that spouses, parents or children can give consent to use the deceased's personal information, which must otherwise remain private. The Law on The Rights of Patients and Compensation of the Damage to their Health states in Article 10.2 that "All of the information concerning the condition of the patient's health, diagnosis, prognosis and treatment, and also all of the other information of a personal nature concerning the patient must be held as confidential, even after the patient's death". The Ministry of Health Decree on Confidentiality 1999/12/16 no. 552 in paragraph 7 states that "information related to person's health remains confidential even after the patient's death".	Anybody
LUXEMBOURG	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	The legislation uses the term "natural person". It is unclear whether this would be interpreted to include the deceased.	Anybody
MALTA	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	Yes	Probably anybody. The 2001 Act uses the same wording as the Directive on this point.

Country	Is it necessary to obtain consent before processing personal data, or are alternatives available even when obtaining consent would not be impracticable or inappropriate?	Does the Data Protection Legislation cover the deceased?	Who is able to indirectly identify the data subject?
NETHERLANDS	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it. However, consent is always required to use medical information in research unless there are exceptional circumstances. See the Medical Treatment Contracts Act.	No	Anybody
NORWAY	It is probably necessary to get consent when is not impracticable or inappropriate.	No	Anybody
POLAND	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	No	Anybody
PORTUGAL	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	Yes	Anybody
ROMANIA	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	No, but the Ethical Code of the College of Physicians states that medical information must remain secret even after the patient's death.	Probably anybody
SLOVAKIA	It is probably necessary to get consent when is not impracticable or inappropriate.	Yes. Consent to use the data of the deceased may be given by a "near person" (Article 4(5) of the Act).	Anybody
SLOVENIA	It is probably necessary to get consent when is not impracticable or inappropriate.	Immediate family members can object to the processing of the deceased's personal data (Article 12 of the 1999 Act).	Anybody
SPAIN	It is probably necessary to get consent when is not impracticable or inappropriate.	No	Anybody

Country	Is it necessary to obtain consent before processing personal data, or are alternatives available even when obtaining consent would not be impracticable or inappropriate?	Does the Data Protection Legislation cover the deceased?	Who is able to indirectly identify the data subject?
SWEDEN	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	No, although information about a deceased person does fall under the Act if it also constitutes information about a living person.	Anybody
UK	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it. However, the Human Rights Act 1998, interpreted in the light of the ECHR, may give priority to consent.	No	Only the data controller. This is a unique position among the countries who have implemented Directive 95/46/EC.
JAPAN	Consent must always be obtained		
NEW ZEALAND	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	No	This is not mentioned in the New Zealand Act.
SWITZERLAND	It is probably sufficient to use alternatives to consent even when it is not impracticable or inappropriate to obtain it.	The Swiss Act states that it is concerned with "physical or legal persons" (Article 3(b)).	This is not mentioned in the Swiss Act.
UNITED STATES	N/A	N/A	N/A

Comparison of Data Protection Act in Some Countries around the World - source Privacy in Research Ethics & Law (PRIVIREAL), available: <http://www.privireal.org/content/dp/countries.php>

Appendix C: Questionnaires & Data Analysis

The Questionnaire

Document Legalisation (Questionnaire)

The Questionnaire:

The purpose of this questionnaire is to help evaluate the need to introduce a new method of legalisation services. The research will help improve the business' workflow.

Use of the data:

The aim is to eventually present the research (along with data collected in other parts of the study) to the Ministry of Foreign Affairs in the appropriate contexts (academic and professional). The researcher will refrain from using data that the participant considers sensitive - no marks or indications will be assigned to identify the participant.

Anonymity of participants:

All information acquired will be treated as confidential. The questionnaire is only a reference to the data collected.

Ref. No : 90046 /*/

1- General

- 1- Is this your first experience of legalising a document? (Please state the number times you have done so)
- 2- Did you call the office prior to your visit? (Yes/No) (If 'No', please go to Question 3)
Have you been briefed on the full extent of the process you need to do? (1-5):- [5 Highest]
- 3- I used the internet for information. (Yes/No)
How informative was the information? (1-5):- [5 Highest]
- 4- How confident are you in being able to understand the process? (1-5):- [5 Highest]
a- What type of document are you legalising? (Birth, Academic Cert., business etc.)
b- Are you legalising an original document or a copy?
c- What is the purpose for legalising the document? (Work, Relocation, Legal etc.)
d- How do you rate the service? (1-5):- [5 Highest]
- 5- Rate the following items in respect of the importance to you. (1-5):- [5 Highest]
- | | Frequency of Use | Importance |
|--------------------------|----------------------|----------------------|
| a- Internet shopping | <input type="text"/> | <input type="text"/> |
| b- e-banking | <input type="text"/> | <input type="text"/> |
| c- Pay bills by internet | <input type="text"/> | <input type="text"/> |
| d- SMS messaging | <input type="text"/> | <input type="text"/> |
- 6- Rate the following statements in relation to the legalisation process. (1-5):- [5 is Highest]
a- The process is well understood and easy to follow.
b- I use this service because I have been requested to do so.
c- I use this service because I know I will need it, with prior experience.
d- Cost of the service.
e- Use the internet for legalisation.
- 7- How far did you travel to reach the office (please state approx. mileage)?
- 8- State the number of documents you are legalising.
- 9- Are you planning to use this document in another country?

2- Comments

3- Process

10- How many years have you been working in this profession?

a- Estimate the number of documents you legalise daily.

b- In what area do you think the most difficulty occurs?

c- How does a customer know that his papers are ready?

d- Can you trace the status of old documents (please state how many years)?
(i.e. How do you know that a document was legalised by your organisation?)
(i.e. How do you know that a document was legalised by your organisation?)

e- What methods are used to trace old documents?
(i.e. a manual search, an automated search, a computerised search?)

f- Do you have a record of all past signatories which were used?

g- How would the final receiving party recognise the authenticity of a

h- How would you be able to recognise that a document has been legalised?

11- What is the purpose of the following marks affixed on documents legalised?
a- The stamps (similar to that of a post office stamp)?

b- The seal on the document?

c- The signature on the document?

d- Would the document be assumed to be legalised if there was one of the above
If so, please state which of the above may be ignored:

4- Management

12- Do you think IT staff can help solve some problems in legalisation?

13- Where, in the process of a document's legalisation, do you think it can be enhanced (please state)?

14- What is the average time taken to legalise one document? (days, hours, minutes)

15- On average, what do you consider errors are due to?

	%
a- Operation process	<input type="text"/>
b- Employees	<input type="text"/>
c- Customer	<input type="text"/>

16- How would the Ministry of Foreign Affairs recognise the authenticity of a legalised document?

5- Costing

17- Rate the cost of legalisation. (1-5):- [5 is Highest]

Sample of Returns

Document Legalisation (Questionnaire)

The Questionnaire:

The purpose of this questionnaire is to help evaluate the need to introduce a new method of legalisation services. The research will help improve the business' workflow.

Use of the data:

The aim is to eventually present the research (along with data collected in other parts of the study) to the Ministry of Foreign Affairs in the appropriate contexts (academic and professional). The researcher will refrain from using data that the participant considers sensitive - no marks or indications will be assigned to identify the participant.

Anonymity of participants:

All information acquired will be treated as confidential. The questionnaire is only a reference to the data collected.

Ref. No : 69444 /*/

1- General

1- Is this your ^{first} experience of legalising a document? (Please state the number times you have done so) 1

2- Did you call the office prior to your visit? (Yes/No) (If 'No', please go to Question 3) Yes
Have you been briefed on the full extent of the process you need to do? (1-5):- [5 Highest] 3

3- I used the internet for information. (Yes/No) Yes
How informative was the information? (1-5):- [5 Highest] 4

4- How confident are you in being able to understand the process? (1-5):- [5 Highest] 2
a- What type of document are you legalising? (Birth, Academic Cert., business etc.) Birth
b- Are you legalising an original document or a copy? Yes
c- What is the purpose for legalising the document? (Work, Relocation, Legal etc.) Reloc.
d- How do you rate the service? (1-5):- [5 Highest] 2

5- Rate the following items in respect of the importance to you. (1-5):- [5 Highest]

	Frequency of Use	Importance
a- Internet shopping	3	2
b- e-banking	4	4
c- Pay bills by internet	4	4
d- SMS messaging	1	3

6- Rate the following statements in relation to the legalisation process. (1-5):- [5 is Highest]

a- The process is well understood and easy to follow. 2

b- I use this service because I have been requested to do so. 5

c- I use this service because I know I will need it, with prior experience. 2

d- Cost of the service. 5

e- Use the internet for legalisation. 5

7- How far did you travel to reach the office (please state approx. mileage)? 25

8- State the number of documents you are legalising. 1

9- Are you planning to use this document in another country? NA

2- Comments

3- Process

- 10- How many years have you been working in this profession?
- a- Estimate the number of documents you legalise daily.
- b- In what area do you think the most difficulty occurs?
- c- How does a customer know that his papers are ready?
- d- Can you trace the status of old documents (please state how many years)?
(i.e. How do you know that a document was legalised by your organisation?)
- e- What methods are used to trace old documents? *m*
(i.e. a manual search, an automated search, a computerised search?)

14
58
500
1000
1

manuval

- f- Do you have a record of all past signatories which were used?
- g- How would the final receiving party recognise the authenticity of a
- h- How would you be able to recognise that a document has been legalised?

2
Signed

looking at the Doc.

- 11- What is the purpose of the following marks affixed on documents legalised?
- a- The stamps (similar to that of a post office stamp)?
- b- The seal on the document?
- c- The signature on the document?
- d- Would the document be assumed to be legalised if there was one of the
If so, please state which of the above may be ignored:

Final
Seal
Auth

none

4- Management

- 12- Do you think IT staff can help solve some problems in legalisation?
- 13- Where, in the process of a document's legalisation, do you think it can be enhanced (please state)?
- 14- What is the average time taken to legalise one document? (days, hours, minutes)
- 15- On average, what do you consider errors are due to?

Yes

Record, call

12

	%
a- Operation process	50%
b- Employees	20%
c- Customer	50%

- 16- How would the Ministry of Foreign Affairs recognise the authenticity of a legalised document?

Lookin at signed seal and stamp

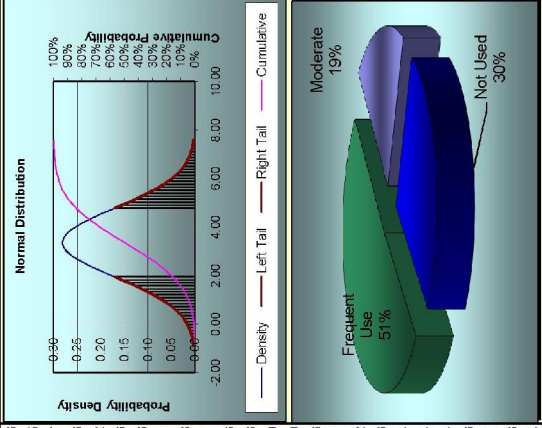
5- Costing

- 17- Rate the cost of legalisation. (1-5):- [5 is Highest]

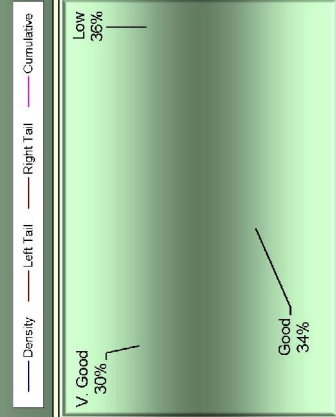
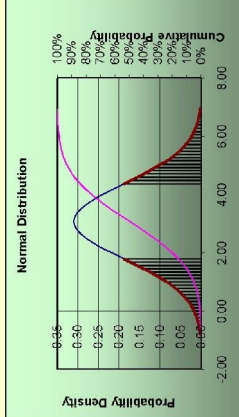
3

Data analysis sheets

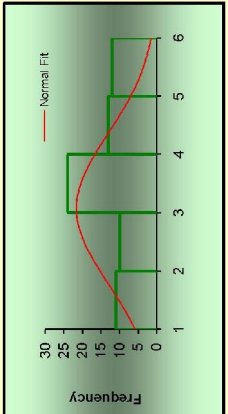
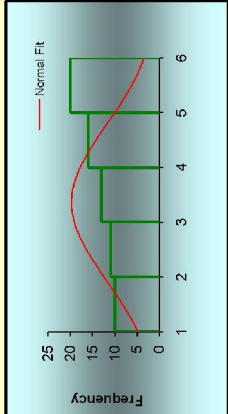
Questionnaire Data Analysis Sheet				
Question	a- Internet shopping	b- e-banking	Graphical Representation	
	The rising trend of Internet shopping		The use of internet banking	
	Mean (μ) 3.357 Median 4.000 Mode 5.000 Standard Deviation (σ) 1.415 Kurtosis -1.182 Skewness -0.349 Sample Variance 2.001 Coefficient of Variation 42.136 Total Participant in This Question 70 Confidence Level (95.0%) 0.33138 Total Distribution 133 Percentage of returns 52.63% $X_{min}= -0.89$ $X_{max}= 7.6$ Step= 0.123	Mean (μ) 3.071 Median 3.000 Mode 3.000 Standard Deviation (σ) 1.289 Kurtosis -0.894 Skewness -0.095 Sample Variance 1.661 Coefficient of Variation 41.967 Total Participant in This Question 70 Confidence Level (95.0%) 0.30196 Total Distribution 133 Percentage of returns 52.63% $X_{min}= -0.8$ $X_{max}= 6.938$ Step= 0.112	Graph Setup Graph Range $X_{min} = \mu - 3 \cdot \sigma$ $X_{max} = \mu + 3 \cdot \sigma$ Step = $\frac{(X_{max} - X_{min})}{Total}$ $Z = \frac{X - \mu}{\sigma}$ $f(x) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$	
	Statistical Data Analysis			
#	Data Analysis			
	% Data	% Data	Normal Distribution	
	Frequent Use Moderate Not Used	Low Good V. Good	Normal Distribution X Z f(x) F(x)	Normal Fit Histogram Normal Distribution Normal Distribution Histogram Normal Distribution
1	0 1 0	0 0 1	-0.80 -3.00 0.0034 0.0013	5.956
2	0 0 1	0 0 1	-0.68 -2.91 0.0044 0.0018	6.335
3	0 0 1	0 0 1	-0.57 -2.83 0.0057 0.0024	6.727
4	0 0 1	0 0 1	-0.46 -2.74 0.0073 0.0031	7.133
5	0 0 1	0 0 1	-0.35 -2.65 0.0092 0.0040	7.552
6	0 0 1	0 0 1	-0.24 -2.57 0.0115 0.0052	7.983
7	0 0 1	0 0 1	-0.15 -2.48 0.0131 0.0066	8.428
8	0 0 1	0 0 1	-0.03 -2.39 0.0162 0.0084	8.881
9	0 0 1	0 0 1	0.10 -2.30 0.0198 0.0106	9.346
10	0 0 1	0 0 1	0.22 -2.22 0.0241 0.0133	9.821
11	0 0 1	0 0 1	0.34 -2.13 0.0292 0.0166	10.3
12	0 0 1	0 0 1	0.47 -2.04 0.0350 0.0205	10.8
13	0 0 1	0 0 1	0.59 -1.96 0.0416 0.0252	11.29
14	0 0 1	0 0 1	0.71 -1.87 0.0491 0.0308	11.79
15	0 0 1	0 0 1	0.84 -1.78 0.0576 0.0373	12.3
16	0 0 1	0 0 1	0.96 -1.70 0.0670 0.0450	12.81
17	0 0 1	0 0 1	1.08 -1.61 0.0773 0.0538	13.32
18	0 0 1	0 0 1	1.20 -1.52 0.0886 0.0640	13.83
19	0 0 1	0 0 1	1.33 -1.43 0.1008 0.0757	14.34
20	0 0 1	0 0 1	1.45 -1.35 0.1137 0.0889	14.84
21	0 0 1	0 0 1	1.57 -1.26 0.1274 0.1037	15.34
22	0 0 1	0 0 1	1.70 -1.17 0.1416 0.1202	15.83
23	0 0 1	0 0 1	1.82 -1.09 0.1562 0.1385	16.31
24	0 0 1	0 0 1	1.94 -1.00 0.1711 0.1587	16.78
25	0 0 1	0 0 1	2.07 -0.91 0.1859 0.1806	17.24



#	Data Analysis										Data Analysis									
	% Data					Normal Distribution					Normal Distribution					Normal Distribution				
	Freque nt Use	Mode rate	Not Used	X	Z	f(x)	F(x)	Histo gram	Norm al Fit	Data	Low	Good	V. Good	X	Z	f(x)	F(x)	Histo gram	Norm al Fit	Data
26	3	0	1	0	2.19	-0.83	0.2005	0.2044	2.25	14.63	0	0	1	2.01	-0.83	0.2200	0.2044	2.25	17.68	
27	5	1	0	0	2.31	-0.74	0.2146	0.2299	2.3	14.93	5	1	0	2.12	-0.74	0.2355	0.2299	2.3	18.11	
28	5	1	0	0	2.43	-0.65	0.2280	0.2571	2.35	15.32	5	1	0	2.23	-0.65	0.2502	0.2571	2.35	18.52	
29	4	1	0	0	2.56	-0.57	0.2404	0.2860	2.4	15.77	3	0	1	2.34	-0.57	0.2638	0.2860	2.4	18.92	
30	5	1	0	0	2.68	-0.48	0.2515	0.3162	2.45	16.07	5	1	0	2.45	-0.48	0.2761	0.3162	2.45	19.29	
31	4	1	0	0	2.80	-0.39	0.2612	0.3478	2.5	16.43	3	0	1	2.57	-0.39	0.2867	0.3478	2.5	19.64	
32	5	1	0	0	2.93	-0.30	0.2693	0.3804	2.55	16.78	3	0	1	2.68	-0.30	0.2955	0.3804	2.55	19.96	
33	5	1	0	0	3.05	-0.22	0.2754	0.4140	2.6	17.11	4	1	0	2.79	-0.22	0.3023	0.4140	2.6	20.26	
34	5	1	0	0	3.17	-0.13	0.2796	0.4481	2.65	17.42	3	0	1	2.90	-0.13	0.3069	0.4481	2.65	20.54	
35	3	0	1	0	3.30	-0.04	0.2818	0.4827	2.7	17.72	5	1	0	3.02	-0.04	0.3092	0.4827	2.7	20.78	
36	4	1	0	0	3.42	0.04	0.2818	0.5173	2.75	18	3	0	1	3.13	0.04	0.3092	0.5173	2.75	21	
37	2	0	0	1	3.54	0.13	0.2796	0.5519	2.8	18.27	3	0	1	3.24	0.13	0.3069	0.5519	2.8	21.19	
38	1	0	0	1	3.66	0.22	0.2754	0.5860	2.85	18.51	3	0	1	3.35	0.22	0.3023	0.5860	2.85	21.35	
39	4	1	0	0	3.79	0.30	0.2693	0.6196	2.9	18.74	4	1	0	3.46	0.30	0.2955	0.6196	2.9	21.47	
40	4	1	0	0	3.91	0.39	0.2612	0.6522	2.95	18.94	2	0	1	3.58	0.39	0.2867	0.6522	2.95	21.57	
41	1	0	0	1	4.03	0.48	0.2515	0.6838	3	19.12	2	0	1	3.69	0.48	0.2761	0.6838	3	21.63	
42	3	0	1	0	4.16	0.57	0.2404	0.7140	3.05	19.28	3	0	1	3.80	0.57	0.2638	0.7140	3.05	21.66	
43	4	1	0	0	4.28	0.65	0.2280	0.7429	3.1	19.42	2	0	1	3.91	0.65	0.2502	0.7429	3.1	21.66	
44	2	0	0	1	4.40	0.74	0.2146	0.7701	3.15	19.53	2	0	1	4.02	0.74	0.2355	0.7701	3.15	21.62	
45	2	0	0	1	4.53	0.83	0.2005	0.7956	3.2	19.62	3	0	1	4.14	0.83	0.2200	0.7956	3.2	21.56	
46	4	1	0	0	4.65	0.91	0.1859	0.8194	3.25	19.68	3	0	1	4.25	0.91	0.2040	0.8194	3.25	21.46	
47	4	1	0	0	4.77	1.00	0.1711	0.8413	3.3	19.73	4	1	0	4.36	1.00	0.1877	0.8413	3.3	21.33	
48	2	0	0	1	4.89	1.09	0.1562	0.8615	3.35	19.74	3	0	1	4.47	1.09	0.1714	0.8615	3.35	21.16	
49	1	0	0	1	5.02	1.17	0.1416	0.8798	3.4	19.73	3	0	1	4.58	1.17	0.1554	0.8798	3.4	20.97	
50	4	1	0	0	5.14	1.26	0.1274	0.8963	3.45	19.7	3	0	1	4.70	1.26	0.1398	0.8963	3.45	20.75	
51	1	0	0	1	5.26	1.35	0.1137	0.9111	3.5	19.64	4	1	0	4.81	1.35	0.1248	0.9111	3.5	20.5	
52	3	0	1	0	5.39	1.43	0.1008	0.9243	3.55	19.56	4	1	0	4.92	1.43	0.1106	0.9243	3.55	20.22	
53	4	1	0	0	5.51	1.52	0.0886	0.9360	3.6	19.45	3	0	1	5.03	1.52	0.0972	0.9360	3.6	19.92	
54	5	1	0	0	5.63	1.61	0.0773	0.9462	3.65	19.32	4	1	0	5.15	1.61	0.0849	0.9462	3.65	19.59	
55	5	1	0	0	5.76	1.70	0.0670	0.9550	3.7	19.17	4	1	0	5.26	1.70	0.0735	0.9550	3.7	19.24	
56	5	1	0	0	5.88	1.78	0.0576	0.9627	3.75	18.99	2	0	1	5.37	1.78	0.0632	0.9627	3.75	18.86	
57	3	0	1	0	6.00	1.87	0.0491	0.9692	3.8	18.8	3	0	1	5.48	1.87	0.0539	0.9692	3.8	18.47	
58	5	1	0	0	6.12	1.96	0.0416	0.9748	3.85	18.58	5	1	0	5.59	1.96	0.0466	0.9748	3.85	18.05	
59	3	0	1	0	6.25	2.04	0.0350	0.9795	3.9	18.34	3	0	1	5.71	2.04	0.0384	0.9795	3.9	17.62	
60	4	1	0	0	6.37	2.13	0.0292	0.9834	3.95	18.08	1	0	1	5.82	2.13	0.0320	0.9834	3.95	17.17	
61	3	0	1	0	6.49	2.22	0.0241	0.9867	4	17.8	1	0	1	5.93	2.22	0.0265	0.9867	4	16.71	
62	4	1	0	0	6.62	2.30	0.0198	0.9894	4.05	17.51	4	1	0	6.04	2.30	0.0218	0.9894	4.05	16.24	
63	4	1	0	0	6.74	2.39	0.0162	0.9916	4.1	17.2	1	0	1	6.15	2.39	0.0177	0.9916	4.1	15.76	
64	1	0	0	1	6.86	2.48	0.0131	0.9934	4.15	16.87	1	0	1	6.27	2.48	0.0144	0.9934	4.15	15.27	
65	3	0	1	0	6.99	2.57	0.0105	0.9948	4.2	16.53	5	1	0	6.38	2.57	0.0115	0.9948	4.2	14.77	
66	3	0	1	0	7.11	2.65	0.0084	0.9960	4.25	16.18	3	0	1	6.49	2.65	0.0092	0.9960	4.25	14.26	
67	3	0	1	0	7.23	2.74	0.0066	0.9969	4.3	15.81	4	1	0	6.60	2.74	0.0073	0.9969	4.3	13.76	
68	2	0	1	0	7.35	2.83	0.0052	0.9976	4.35	15.43	4	1	0	6.71	2.83	0.0057	0.9976	4.35	13.25	
69	3	0	1	0	7.48	2.91	0.0041	0.9982	4.4	15.04	4	1	0	6.83	2.91	0.0044	0.9982	4.4	12.74	
70	5	1	0	0	7.60	3.00	0.0031	0.9987	4.45	14.65	4	1	0	6.94	3.00	0.0034	0.9987	4.45	12.23	



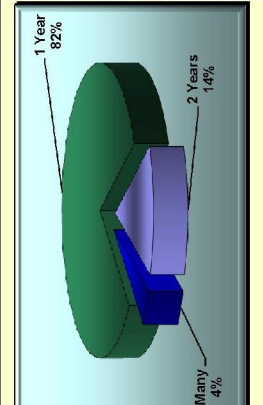
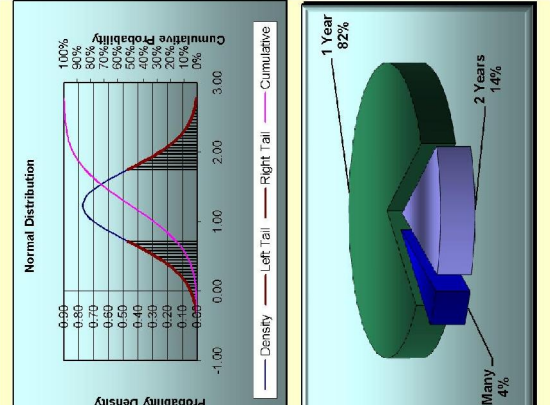
#	Data Analysis						Data Analysis									
	Data		% Data		Normal Distribution		Data		% Data		Normal Distribution					
	Frequency	Modulate	Not Used	X	Z	F(x)	Normal Fit	Frequency	Good	V. Good	X	Z	f(x)	F(x)	Normal Fit	
%		51.43%	18.57%	30.00%		100.0%	4.5	14.24	35.71%	34.29%	30.00%			100.0%	4.5	11.72
		Histogram					4.55	13.83							4.55	11.22
		1	0				4.6	13.42							4.6	10.72
		1	10				4.65	13							4.65	10.23
		2	10				4.75	12.16							4.7	9.753
		2	0				4.8	11.73							4.8	8.816
		2	11				4.85	11.31							4.85	8.382
		3	11				4.9	10.89							4.9	7.921
		3	0				4.95	10.47							4.95	7.491
		3	0				5	10.06							5	7.074
		3	13				5.05	9.647							5.05	6.67
		4	13				5.1	9.242							5.1	6.28
		4	0				5.15	8.842							5.15	5.903
		4	16				5.2	8.45							5.2	5.541
		5	16				5.25	8.064							5.25	5.194
		5	0				5.3	7.687							5.3	4.86
		5	20				5.35	7.318							5.35	4.542
		6	20				5.4	6.958							5.4	4.237
		6	0				5.45	6.608							5.45	3.946
							5.5	6.267							5.5	3.672
							5.55	5.937							5.55	3.411
							5.6	5.617							5.6	3.163
							5.65	5.307							5.65	2.929
							5.7	5.009							5.7	2.709
							5.75	4.721							5.75	2.501
							5.8	4.444							5.8	2.305
							5.85	4.178							5.85	2.122
							5.9	3.924							5.9	1.95
							5.95	3.68							5.95	1.79
							6	3.447							6	1.64



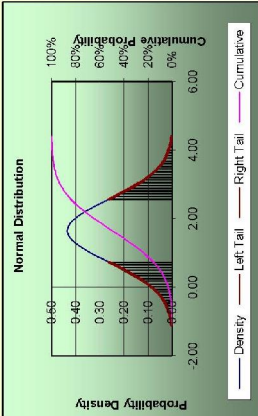
Questionnaire Data Analysis Sheet

Question	Traceability (i.e. How do you know that a document was legalised by your many years?)		Auto/Manual (i.e. a manual search, an automated search, a computerised search?)		Graphical Representation
	d- Can you trace the status of old documents (please state how many years?)				
Statistical Data Analysis	Mean (u)	1.229	Mean (u)	1.643	$f(x) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$
	Median	1.000	Median	1.000	
	Mode	1.000	Mode	1.000	
	Standard Deviation (σ)	0.516	Standard Deviation (σ)	0.917	
	Kurtosis	4.301	Kurtosis	-1.368	
	Skewness	2.241	Skewness	0.781	
	Sample Variance	0.266	Sample Variance	0.842	
	Coefficient of Variation	41.967	Coefficient of Variation	55.841	
	Total Participant in This Question	70	Total Participant in This Question	70	
	Confidence Level (95.0%)	0.12078	Confidence Level (95.0%)	0.21491	
Total Distribution	133	Total Distribution	133		
Percentage of returns	52.63%	Percentage of returns	52.63%		
$X_{min} = -0.32$ $X_{max} = 2.78$ Step=	0.045	$X_{min} = -1.11$ $X_{max} = 4.395$ Step=	0.080		

#	Data Analysis										Data Analysis																			
	% Data					Normal Distribution					Normal Fit					Normal Distribution					Normal Fit									
	1 Year	2 Years	Many	X	Z	f(x)	F(x)	Histogram	Normal	Fit	Manu	Auto	N/A	X	Z	f(x)	F(x)	Histogram	Normal	Fit	Manu	Auto	N/A	X	Z	f(x)	F(x)	Histogram	Normal	Fit
1	1	0	0	-0.32	-3.00	0.0066	0.0013	1	49.0634	1	1	0	-1.11	-3.00	0.0048	0.0013	1	23.8155	1	1	0	0	0	-1.03	-2.91	0.0062	0.0018	1.03	24.3525	
2	1	0	0	-0.27	-2.91	0.0111	0.0018	1	50.291	1	1	0	-0.95	-2.83	0.0062	0.0024	1	1.06	24.8777	1	1	0	0	0	-0.87	-2.74	0.0102	0.0031	1.09	25.3857
3	1	0	0	-0.23	-2.83	0.0143	0.0024	1	51.3438	1	1	0	-0.79	-2.65	0.0129	0.0040	1	1.12	25.8771	1	1	0	0	0	-0.71	-2.57	0.0162	0.0052	1.15	26.3498
4	1	0	0	-0.18	-2.74	0.0182	0.0031	2	52.2413	2	0	0	-0.63	-2.48	0.0202	0.0066	1	1.18	26.8025	1	1	0	0	0	-0.55	-2.39	0.0249	0.0084	1.21	27.2338
5	2	0	1	-0.14	-2.65	0.0230	0.0040	1	52.9749	1	1	0	-0.47	-2.30	0.0306	0.0106	1	1.24	27.6425	1	1	0	0	0	-0.39	-2.22	0.0372	0.0133	1.27	28.0273
6	1	0	0	-0.09	-2.57	0.0288	0.0052	1	53.5373	1	1	0	-0.31	-2.13	0.0450	0.0166	1	1.33	28.3871	1	1	0	0	0	-0.23	-2.04	0.0539	0.0205	1.33	28.7208
7	1	0	0	-0.05	-2.48	0.0359	0.0066	1	53.9228	1	1	0	-0.15	-1.96	0.0641	0.0252	1	1.36	29.0274	1	1	0	0	0	-0.07	-1.87	0.0757	0.0308	1.39	29.3059
8	1	0	0	0.00	-2.39	0.0443	0.0084	1	54.1274	3	0	0	0.01	-1.78	0.0888	0.0373	1	1.42	29.5554	1	1	0	0	0	0.01	-1.78	0.0888	0.0373	1.42	29.5554
9	1	0	0	0.04	-2.30	0.0544	0.0106	1	54.1493	1	1	0	0.09	-1.70	0.1033	0.0450	1	1.45	29.7752	1	1	0	0	0	0.09	-1.70	0.1033	0.0450	1.45	29.7752
10	1	0	0	0.09	-2.22	0.0662	0.0133	1	53.9885	1	1	0	0.17	-1.61	0.1192	0.0538	1	1.48	29.9646	1	1	0	0	0	0.17	-1.61	0.1192	0.0538	1.48	29.9646
11	1	0	0	0.13	-2.13	0.0800	0.0166	1	53.6463	3	0	0	0.25	-1.52	0.1366	0.0640	1	1.51	30.1229	1	1	0	0	0	0.25	-1.52	0.1366	0.0640	1.51	30.1229
12	2	0	1	0.17	-2.04	0.0959	0.0205	1	53.1246	1	1	0	0.31	-1.43	0.1554	0.0757	1	1.54	30.2497	1	1	0	0	0	0.31	-1.43	0.1554	0.0757	1.54	30.2497
13	1	0	0	0.22	-1.96	0.1141	0.0252	1	52.4312	1	1	0	0.41	-1.35	0.1753	0.0889	1	1.57	30.3446	1	1	0	0	0	0.41	-1.35	0.1753	0.0889	1.57	30.3446
14	1	0	0	0.26	-1.87	0.1348	0.0308	1	51.5719	3	0	0	0.49	-1.26	0.1964	0.1037	1	1.6	30.4073	1	1	0	0	0	0.49	-1.26	0.1964	0.1037	1.6	30.4073
15	1	0	0	0.31	-1.78	0.1580	0.0373	1	50.5552	1	1	0	0.58	-1.17	0.2183	0.1202	1	1.63	30.4375	1	1	0	0	0	0.58	-1.17	0.2183	0.1202	1.63	30.4375
16	1	0	0	0.35	-1.70	0.1838	0.0450	1	49.3911	3	0	0	0.62	-1.09	0.2409	0.1385	1	1.66	30.4352	1	1	0	0	0	0.62	-1.09	0.2409	0.1385	1.66	30.4352
17	2	0	1	0.40	-1.61	0.2122	0.0538	1	48.0908	1	1	0	0.71	-1.00	0.2638	0.1587	1	1.69	30.4003	1	1	0	0	0	0.71	-1.00	0.2638	0.1587	1.69	30.4003
18	1	0	0	0.44	-1.52	0.2431	0.0640	1	46.6664	3	0	0	0.80	-0.83	0.2866	0.1806	1	1.72	30.3333	1	1	0	0	0	0.80	-0.83	0.2866	0.1806	1.72	30.3333
19	1	0	0	0.49	-1.43	0.2764	0.0757	1	45.1311	1	1	0	0.82	-0.75	0.3091	0.2044	1	1.75	30.2396	1	1	0	0	0	0.82	-0.75	0.3091	0.2044	1.75	30.2396
20	1	0	0	0.53	-1.35	0.3120	0.0889	1	43.4888	1	1	0	0.80	-0.83	0.2866	0.1806	1	1.72	30.3333	1	1	0	0	0	0.80	-0.83	0.2866	0.1806	1.72	30.3333
21	2	0	1	0.58	-1.26	0.3494	0.1037	1	41.7838	3	0	0	0.75	-0.91	0.2666	0.1587	1	1.69	30.4003	1	1	0	0	0	0.75	-0.91	0.2666	0.1587	1.69	30.4003
22	1	0	0	0.62	-1.17	0.3885	0.1202	1	40.0009	1	1	0	0.65	-1.09	0.2409	0.1385	1	1.66	30.4352	1	1	0	0	0	0.65	-1.09	0.2409	0.1385	1.66	30.4352
23	1	0	0	0.67	-1.09	0.4288	0.1385	1	38.1646	1	1	0	0.57	-1.17	0.2183	0.1202	1	1.63	30.4375	1	1	0	0	0	0.57	-1.17	0.2183	0.1202	1.63	30.4375
24	2	0	1	0.71	-1.00	0.4693	0.1587	1	36.2895	3	0	0	0.49	-1.26	0.1964	0.1037	1	1.6	30.4073	1	1	0	0	0	0.49	-1.26	0.1964	0.1037	1.6	30.4073
25	1	0	0	0.76	-0.91	0.5100	0.1806	1	34.3669	3	0	0	0.41	-1.35	0.1753	0.0889	1	1.57	30.3446	1	1	0	0	0	0.41	-1.35	0.1753	0.0889	1.57	30.3446
26	1	0	0	0.80	-0.83	0.5501	0.2044	1	32.4796	2	0	0	0.31	-1.43	0.1554	0.0757	1	1.54	30.2497	1	1	0	0	0	0.31	-1.43	0.1554	0.0757	1.54	30.2497



#	Data	Data Analysis						Data Analysis						Data	Normal Fit	Histogram	Normal Fit			
		% Data			Normal Distribution			% Data			Normal Distribution							Histogram	Normal Fit	
		1 Year	2 Years	Many	X	Z	f(x)	F(x)	Manual	Automatic	N/A	X	Z							f(x)
27	2	0	1	0	0.85	-0.74	0.5888	0.2299	1.78	30.5717	3	0	0	1	0.96	-0.74	0.3309	0.2299	1.78	30.1022
28	2	0	1	0	0.89	-0.65	0.6255	0.2571	1.81	28.6787	1	1	0	0	1.04	-0.65	0.3516	0.2571	1.81	29.9394
29	1	1	0	0	0.94	-0.57	0.6595	0.2660	1.84	26.8119	3	0	0	1	1.12	-0.57	0.3707	0.2660	1.84	29.7457
30	1	1	0	0	0.98	-0.48	0.6901	0.3162	1.87	24.982	1	1	0	0	1.20	-0.48	0.3879	0.3162	1.87	29.5216
31	3	0	1	0	1.03	-0.39	0.7167	0.3478	1.9	23.1982	2	0	1	0	1.28	-0.39	0.4028	0.3478	1.9	29.2679
32	1	1	0	0	1.07	-0.30	0.7387	0.3804	1.93	21.469	1	1	0	0	1.36	-0.30	0.4152	0.3804	1.93	28.9853
33	1	1	0	0	1.12	-0.22	0.7557	0.4140	1.96	19.8016	1	1	0	0	1.44	-0.22	0.4247	0.4140	1.96	28.6748
34	1	1	0	0	1.16	-0.13	0.7672	0.4481	1.99	18.2019	1	1	0	0	1.52	-0.13	0.4312	0.4481	1.99	28.3373
35	2	0	1	0	1.21	-0.04	0.7730	0.4827	2.02	16.675	3	0	1	0	1.60	-0.04	0.4345	0.4827	2.02	27.9739
36	1	1	0	0	1.25	0.04	0.7730	0.5173	2.05	15.2244	1	1	0	0	1.68	0.04	0.4345	0.5173	2.05	27.5856
37	1	1	0	0	1.30	0.13	0.7672	0.5519	2.08	13.8531	3	0	1	0	1.76	0.13	0.4312	0.5519	2.08	27.1736
38	3	0	1	0	1.34	0.22	0.7557	0.5860	2.11	12.5627	1	1	0	0	1.84	0.22	0.4247	0.5860	2.11	26.7391
39	1	1	0	0	1.39	0.30	0.7387	0.6196	2.14	11.354	1	1	0	0	1.92	0.30	0.4152	0.6196	2.14	26.2835
40	3	0	1	0	1.43	0.39	0.7167	0.6522	2.17	10.2269	3	0	1	0	2.00	0.39	0.4028	0.6522	2.17	25.808
41	1	1	0	0	1.48	0.48	0.6901	0.6838	2.2	9.18058	1	1	0	0	2.08	0.48	0.3879	0.6838	2.2	25.3141
42	1	1	0	0	1.52	0.57	0.6595	0.7140	2.23	8.21343	3	0	1	0	2.16	0.57	0.3707	0.7140	2.23	24.803
43	1	1	0	0	1.56	0.65	0.6255	0.7429	2.26	7.32334	3	0	1	0	2.24	0.65	0.3516	0.7429	2.26	24.2753
44	1	1	0	0	1.61	0.74	0.5888	0.7701	2.29	6.50764	1	1	0	0	2.32	0.74	0.3309	0.7701	2.29	23.7354
45	1	1	0	0	1.65	0.83	0.5501	0.7956	2.32	5.76225	1	1	0	0	2.40	0.83	0.3091	0.7956	2.32	23.1818
46	1	1	0	0	1.70	0.91	0.5100	0.8194	2.35	5.08676	3	0	1	0	2.48	0.91	0.2866	0.8194	2.35	22.6168
47	1	1	0	0	1.74	1.00	0.4693	0.8413	2.38	4.4745	1	1	0	0	2.56	1.00	0.2638	0.8413	2.38	22.0421
48	1	1	0	0	1.79	1.09	0.4286	0.8615	2.41	3.92263	1	1	0	0	2.64	1.09	0.2409	0.8615	2.41	21.459
49	1	1	0	0	1.83	1.17	0.3885	0.8798	2.44	3.4272	3	0	1	0	2.72	1.17	0.2183	0.8798	2.44	20.869
50	1	1	0	0	1.88	1.26	0.3494	0.8963	2.47	2.98423	1	1	0	0	2.80	1.26	0.1964	0.8963	2.47	20.2735
51	1	1	0	0	1.92	1.35	0.3120	0.9111	2.5	2.59873	1	1	0	0	2.88	1.35	0.1753	0.9111	2.5	19.6739
52	1	1	0	0	1.97	1.43	0.2764	0.9243	2.53	2.23978	3	0	1	0	2.96	1.43	0.1554	0.9243	2.53	19.0717
53	1	1	0	0	2.01	1.52	0.2431	0.9360	2.56	1.93058	1	1	0	0	3.04	1.52	0.1366	0.9360	2.56	18.4682
54	1	1	0	0	2.06	1.61	0.2122	0.9462	2.59	1.65843	1	1	0	0	3.12	1.61	0.1192	0.9462	2.59	17.8646
55	1	1	0	0	2.10	1.70	0.1838	0.9550	2.62	1.41984	1	1	0	0	3.20	1.70	0.1033	0.9550	2.62	17.2623
56	1	1	0	0	2.15	1.78	0.1580	0.9627	2.65	1.21146	3	0	1	0	3.28	1.78	0.0888	0.9627	2.65	16.6625
57	2	0	1	0	2.19	1.87	0.1348	0.9692	2.68	1.03017	1	1	0	0	3.36	1.87	0.0757	0.9692	2.68	16.0663
58	1	1	0	0	2.24	1.96	0.1141	0.9748	2.71	0.87305	1	1	0	0	3.44	1.96	0.0641	0.9748	2.71	15.4749
59	1	1	0	0	2.28	2.04	0.0959	0.9795	2.74	0.73739	1	1	0	0	3.52	2.04	0.0539	0.9795	2.74	14.8894
60	1	1	0	0	2.33	2.13	0.0800	0.9834	2.77	0.62071	3	0	1	0	3.60	2.13	0.0450	0.9834	2.77	14.3106
61	1	1	0	0	2.37	2.22	0.0662	0.9867	2.8	0.52072	3	0	1	0	3.68	2.22	0.0372	0.9867	2.8	13.7397
62	1	1	0	0	2.42	2.30	0.0544	0.9894	2.83	0.43637	1	1	0	0	3.76	2.30	0.0306	0.9894	2.83	13.1775
63	2	0	1	0	2.46	2.39	0.0443	0.9916	2.86	0.36277	1	1	0	0	3.84	2.39	0.0249	0.9916	2.86	12.6247
64	1	1	0	0	2.51	2.48	0.0359	0.9934	2.89	0.30126	1	1	0	0	3.92	2.48	0.0202	0.9934	2.89	12.0822
65	1	1	0	0	2.55	2.57	0.0288	0.9948	2.92	0.24933	1	1	0	0	4.00	2.57	0.0162	0.9948	2.92	11.5507
66	1	1	0	0	2.60	2.65	0.0230	0.9960	2.95	0.20566	1	1	0	0	4.08	2.65	0.0129	0.9960	2.95	11.0308
67	1	1	0	0	2.64	2.74	0.0182	0.9969	2.98	0.16906	1	1	0	0	4.16	2.74	0.0102	0.9969	2.98	10.523
68	1	1	0	0	2.69	2.83	0.0143	0.9976	3.01	0.13851	1	1	0	0	4.24	2.83	0.0080	0.9976	3.01	10.0278
69	1	1	0	0	2.73	2.91	0.0111	0.9982	3.04	0.11309	1	1	0	0	4.32	2.91	0.0062	0.9982	3.04	9.54572
70	1	1	0	0	2.78	3.00	0.0086	0.9987	3.07	0.09203	1	1	0	0	4.40	3.00	0.0048	0.9987	3.07	9.07711
%		81.43%	14.29%	4.29%				100.0%	3.1	0.07463		65.71%	4.29%	30.00%				100.0%	3.1	8.62228
									3.13	0.06032									3.13	8.18149



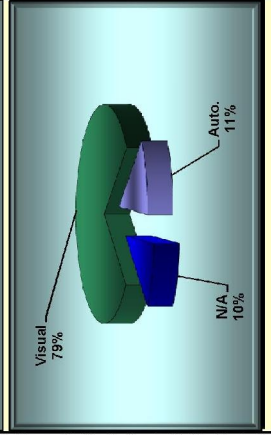
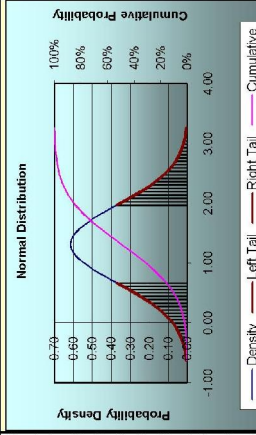
#	Data Analysis													
	Data					Data								
	% Data		Normal Distribution			% Data		Normal Distribution						
1 Year	2 Years	X	Z	$f(x)$	F(X)	Menu	Autom	N/A	X	Z	$f(x)$	F(X)	Histogram	Normal Fit
	Histogram						Histogram							
	1	0					1	0						3.16
	1	57					1	46						3.19
	2	57					2	46						3.22
	2	0					2	0						3.25
	2	10					2	3						3.28
	3	10					3	3						3.31
	3	0					3	0						3.34
	3	3					3	21						3.37
	4	3					4	21						3.43
	4	0					4	0						3.46
														3.49
														3.52
														3.55
														3.58
														3.61
														3.64
														3.67
														3.7
														3.73
														3.76
														3.79
														3.82
														3.85
														3.88
														3.91
														3.94
														3.97
														4

Data Analysis														
Data					Data									
% Data		Normal Distribution			% Data		Normal Distribution							
1 Year	2 Years	X	Z	$f(x)$	F(X)	Menu	Autom	N/A	X	Z	$f(x)$	F(X)	Histogram	Normal Fit
	Histogram						Histogram							
	1	0					1	0						3.16
	1	57					1	46						3.19
	2	57					2	46						3.22
	2	0					2	0						3.25
	2	10					2	3						3.28
	3	10					3	3						3.31
	3	0					3	0						3.34
	3	3					3	21						3.37
	4	3					4	21						3.43
	4	0					4	0						3.46
														3.49
														3.52
														3.55
														3.58
														3.61
														3.64
														3.67
														3.7
														3.73
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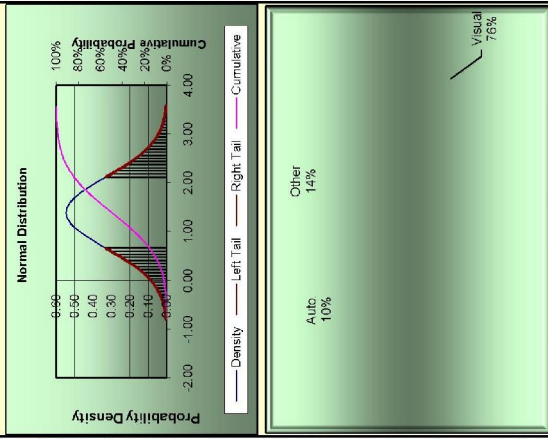
Questionnaire Data Analysis Sheet

Question	g- How would the final receiving party recognise the authenticity of a document?	h- How would you be able to recognise that a document has been legalised?	Graphical Representation
	Visual - Automatic	Visual - Automatic	Graph Setup
	Mean (u) 1.314 Median 1.000 Mode 1.000 Standard Deviation (σ) 0.649 Kurtosis 2.099 Skewness 1.875 Sample Variance 0.422 Coefficient of Variation 48.400 Total Participant in This Question 70 Confidence Level (95.0%) 0.15209 Total Distribution 133 Percentage of returns 52.63% $X_{min} = -0.63$ $X_{max} = 3.26$ Step= 0.056	Mean (u) 1.386 Median 1.000 Mode 1.000 Standard Deviation (σ) 0.728 Kurtosis 0.806 Skewness 1.571 Sample Variance 0.530 Coefficient of Variation 52.548 Total Participant in This Question 70 Confidence Level (95.0%) 0.17058 Total Distribution 133 Percentage of returns 52.63% $X_{min} = -0.8$ $X_{max} = 3.57$ Step= 0.063	$f(x) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$

#	Data Analysis										Data Analysis									
	% Data					Normal Distribution					% Data					Normal Distribution				
	Visual	Auto.	N/A	X	Z	f(x)	F(x)	Histo gram	Norm al fit	Data	Visual	Auto.	Other	X	Z	f(x)	F(x)	Histo gram	Norm al fit	
1	1	0	0	-0.63	-3.00	0.0068	0.0013	1	38.26	1	0	0	-0.80	-3.00	0.0061	0.0013	1	33.33	1	
2	1	0	0	-0.58	-2.91	0.0088	0.0018	1	39.08	1	0	0	-0.74	-2.91	0.0079	0.0018	1	34.04	1	
3	1	0	0	-0.52	-2.83	0.0113	0.0024	1	39.84	1	0	0	-0.67	-2.83	0.0101	0.0024	1	34.7	1	
4	1	0	0	-0.46	-2.74	0.0144	0.0031	1	40.52	3	0	0	-0.61	-2.74	0.0129	0.0031	1	35.32	1	
5	1	0	0	-0.41	-2.65	0.0182	0.0040	1	41.13	1	0	0	-0.55	-2.65	0.0163	0.0040	1	35.88	1	
6	1	0	0	-0.35	-2.57	0.0229	0.0052	1	41.66	1	0	0	-0.48	-2.57	0.0204	0.0052	1	36.39	1	
7	1	0	0	-0.29	-2.48	0.0285	0.0066	1	42.1	1	0	0	-0.42	-2.48	0.0254	0.0066	1	36.85	1	
8	1	0	0	-0.24	-2.39	0.0352	0.0084	1	42.46	1	0	0	-0.36	-2.39	0.0314	0.0084	1	37.25	1	
9	1	0	0	-0.18	-2.30	0.0432	0.0106	1	42.73	1	0	0	-0.29	-2.30	0.0385	0.0106	1	37.59	1	
10	1	0	0	-0.13	-2.22	0.0526	0.0133	1	42.91	1	0	0	-0.23	-2.22	0.0469	0.0133	1	37.87	1	
11	1	0	0	-0.07	-2.13	0.0635	0.0166	1	43	1	0	0	-0.17	-2.13	0.0566	0.0166	1	38.09	1	
12	1	0	0	-0.01	-2.04	0.0762	0.0205	1	43	1	0	0	-0.10	-2.04	0.0679	0.0205	1	38.24	1	
13	1	0	0	0.04	-1.96	0.0906	0.0252	1	42.91	1	0	0	-0.04	-1.96	0.0808	0.0252	1	38.33	1	
14	1	0	0	0.10	-1.87	0.1070	0.0308	1	42.72	1	0	0	0.02	-1.87	0.0954	0.0308	1	38.35	1	
15	1	0	0	0.16	-1.78	0.1254	0.0373	1	42.45	1	0	0	0.09	-1.78	0.1119	0.0373	1	38.31	1	
16	1	0	0	0.21	-1.70	0.1459	0.0450	1	42.08	1	0	0	0.15	-1.70	0.1301	0.0450	1	38.2	1	
17	1	0	0	0.27	-1.61	0.1685	0.0538	1	41.63	1	0	0	0.21	-1.61	0.1502	0.0538	1	38.03	1	
18	1	0	0	0.33	-1.52	0.1930	0.0640	1	41.1	1	0	0	0.28	-1.52	0.1721	0.0640	1	37.8	1	
19	1	0	0	0.38	-1.43	0.2195	0.0757	1	40.49	1	0	0	0.34	-1.43	0.1957	0.0757	1	37.5	1	
20	1	0	0	0.44	-1.35	0.2478	0.0889	1	39.8	1	0	0	0.40	-1.35	0.2209	0.0889	1	37.14	1	
21	1	0	0	0.50	-1.26	0.2775	0.1037	1	39.04	1	0	0	0.47	-1.26	0.2474	0.1037	1	36.73	1	
22	1	0	0	0.55	-1.17	0.3085	0.1202	1	38.22	1	0	0	0.53	-1.17	0.2751	0.1202	1	36.25	1	
23	1	0	0	0.61	-1.09	0.3404	0.1385	1	37.33	1	0	0	0.59	-1.09	0.3035	0.1385	1	35.72	1	
24	1	0	0	0.67	-1.00	0.3727	0.1587	1	36.38	1	0	0	0.66	-1.00	0.3323	0.1587	1	35.14	1	
25	1	0	0	0.72	-0.91	0.4050	0.1806	1	35.38	1	0	0	0.72	-0.91	0.3611	0.1806	1	34.52	1	



#	Data Analysis												Data Analysis													
	% Data				Normal Distribution				Normal Fit				% Data				Normal Distribution				Normal Fit					
	Visual	Auto	N/A		X	Z	f(x)	F(X)	Histo	Norm	gram	al fit	Data	Visual	Auto	Other		X	Z	f(x)	F(X)	Histo	Norm	gram	al fit	
26	1	0	0	0	0.78	-0.83	0.4368	0.2044	1.75	34.34	1	1	0	0	0	0	0.78	-0.83	0.3885	0.2044	1.75	33.84	1	1	0	0
27	1	0	0	0	0.83	-0.74	0.4676	0.2299	1.78	33.26	1	1	0	0	0	0	0.85	-0.74	0.4169	0.2299	1.78	33.12	1	1	0	0
28	1	0	0	0	0.89	-0.65	0.4967	0.2571	1.81	32.14	1	1	0	0	0	0	0.91	-0.65	0.4429	0.2571	1.81	32.36	1	1	0	0
29	1	0	0	0	0.95	-0.57	0.5237	0.2860	1.84	30.99	1	1	0	0	0	0	0.97	-0.57	0.4670	0.2860	1.84	31.57	1	1	0	0
30	1	0	0	0	1.00	-0.48	0.5481	0.3162	1.87	29.82	1	1	0	0	0	0	1.04	-0.48	0.4887	0.3162	1.87	30.74	1	1	0	0
31	1	0	0	0	1.06	-0.39	0.5692	0.3478	1.9	28.63	1	1	0	0	0	0	1.10	-0.39	0.5075	0.3478	1.9	29.89	1	1	0	0
32	1	0	0	0	1.12	-0.30	0.5867	0.3804	1.93	27.43	1	1	0	0	0	0	1.16	-0.30	0.5231	0.3804	1.93	29	1	1	0	0
33	2	0	0	0	1.17	-0.22	0.6001	0.4140	1.96	26.23	1	1	0	0	0	0	1.23	-0.22	0.5351	0.4140	1.96	28.1	1	1	0	0
34	1	0	0	0	1.23	-0.13	0.6093	0.4481	1.99	25.03	1	1	0	0	0	0	1.29	-0.13	0.5432	0.4481	1.99	27.18	1	1	0	0
35	1	0	0	0	1.29	-0.04	0.6139	0.4827	2.02	23.83	1	1	0	0	0	0	1.35	-0.04	0.5474	0.4827	2.02	26.24	1	1	0	0
36	1	0	0	0	1.34	0.04	0.6139	0.5173	2.05	22.63	1	1	0	0	0	0	1.42	0.04	0.5474	0.5173	2.05	25.3	1	1	0	0
37	1	0	0	0	1.40	0.13	0.6093	0.5519	2.08	21.46	1	1	0	0	0	0	1.48	0.13	0.5432	0.5519	2.08	24.34	1	1	0	0
38	1	0	0	0	1.46	0.22	0.6001	0.5860	2.11	20.3	1	1	0	0	0	0	1.54	0.22	0.5351	0.5860	2.11	23.39	1	1	0	0
39	1	0	0	0	1.51	0.30	0.5867	0.6196	2.14	19.16	1	1	0	0	0	0	1.61	0.30	0.5231	0.6196	2.14	22.43	1	1	0	0
40	1	0	0	0	1.57	0.39	0.5692	0.6522	2.17	18.05	1	1	0	0	0	0	1.67	0.39	0.5075	0.6522	2.17	21.47	1	1	0	0
41	2	0	0	0	1.62	0.48	0.5481	0.6838	2.2	16.96	1	1	0	0	0	0	1.73	0.48	0.4887	0.6838	2.2	20.52	1	1	0	0
42	2	0	0	0	1.68	0.57	0.5237	0.7140	2.23	15.91	1	1	0	0	0	0	1.80	0.57	0.4670	0.7140	2.23	19.58	1	1	0	0
43	2	0	0	0	1.74	0.65	0.4967	0.7429	2.26	14.89	1	1	0	0	0	0	1.86	0.65	0.4429	0.7429	2.26	18.65	1	1	0	0
44	1	0	0	0	1.79	0.74	0.4676	0.7701	2.29	13.91	1	1	0	0	0	0	1.92	0.74	0.4169	0.7701	2.29	17.74	1	1	0	0
45	1	0	0	0	1.85	0.83	0.4368	0.7956	2.32	12.96	2	0	0	0	0	0	1.99	0.83	0.3885	0.7956	2.32	16.84	1	1	0	0
46	1	0	0	0	1.91	0.91	0.4050	0.8194	2.35	12.05	1	1	0	0	0	0	2.05	0.91	0.3611	0.8194	2.35	15.96	1	1	0	0
47	1	0	0	0	1.96	1.00	0.3727	0.8413	2.38	11.18	2	0	0	0	0	0	2.11	1.00	0.3323	0.8413	2.38	15.1	1	1	0	0
48	1	0	0	0	2.02	1.09	0.3404	0.8615	2.41	10.35	2	0	0	0	0	0	2.18	1.09	0.3035	0.8615	2.41	14.26	1	1	0	0
49	3	0	0	0	2.08	1.17	0.3085	0.8798	2.44	9.567	1	1	0	0	0	0	2.24	1.17	0.2751	0.8798	2.44	13.45	1	1	0	0
50	1	0	0	0	2.13	1.26	0.2775	0.8963	2.47	8.821	3	0	0	0	0	0	2.30	1.26	0.2474	0.8963	2.47	12.66	1	1	0	0
51	1	0	0	0	2.19	1.35	0.2478	0.9111	2.5	8.116	1	1	0	0	0	0	2.37	1.35	0.2209	0.9111	2.5	11.89	1	1	0	0
52	1	0	0	0	2.25	1.43	0.2195	0.9243	2.53	7.451	1	1	0	0	0	0	2.43	1.43	0.1957	0.9243	2.53	11.16	1	1	0	0
53	2	0	0	0	2.30	1.52	0.1930	0.9360	2.56	6.827	1	1	0	0	0	0	2.49	1.52	0.1721	0.9360	2.56	10.45	1	1	0	0
54	3	0	0	0	2.36	1.61	0.1685	0.9462	2.59	6.241	1	1	0	0	0	0	2.56	1.61	0.1502	0.9462	2.59	9.768	1	1	0	0
55	3	0	0	0	2.42	1.70	0.1459	0.9550	2.62	5.693	1	1	0	0	0	0	2.62	1.70	0.1301	0.9550	2.62	9.117	1	1	0	0
56	3	0	0	0	2.47	1.78	0.1254	0.9627	2.65	5.182	3	0	0	0	0	0	2.68	1.78	0.1119	0.9627	2.65	8.495	1	1	0	0
57	1	0	0	0	2.53	1.87	0.1070	0.9692	2.68	4.707	3	0	0	0	0	0	2.75	1.87	0.0954	0.9692	2.68	7.902	1	1	0	0
58	3	0	0	0	2.58	1.96	0.0906	0.9748	2.71	4.287	3	0	0	0	0	0	2.81	1.96	0.0808	0.9748	2.71	7.338	1	1	0	0
59	3	0	0	0	2.64	2.04	0.0762	0.9795	2.74	3.859	3	0	0	0	0	0	2.87	2.04	0.0679	0.9795	2.74	6.802	1	1	0	0
60	3	0	0	0	2.70	2.13	0.0635	0.9834	2.77	3.483	3	0	0	0	0	0	2.94	2.13	0.0566	0.9834	2.77	6.295	1	1	0	0
61	1	0	0	0	2.75	2.22	0.0526	0.9867	2.8	3.137	1	1	0	0	0	0	3.00	2.22	0.0489	0.9867	2.8	5.816	1	1	0	0
62	3	0	0	0	2.81	2.30	0.0432	0.9894	2.83	2.819	3	0	0	0	0	0	3.06	2.30	0.0385	0.9894	2.83	5.364	1	1	0	0
63	1	0	0	0	2.87	2.39	0.0352	0.9916	2.86	2.528	3	0	0	0	0	0	3.13	2.39	0.0314	0.9916	2.86	4.939	1	1	0	0
64	1	0	0	0	2.92	2.48	0.0285	0.9934	2.89	2.262	3	0	0	0	0	0	3.19	2.48	0.0254	0.9934	2.89	4.54	1	1	0	0
65	1	0	0	0	2.98	2.57	0.0229	0.9948	2.92	2.02	2	0	0	0	0	0	3.25	2.57	0.0204	0.9948	2.92	4.166	1	1	0	0
66	1	0	0	0	3.04	2.65	0.0182	0.9960	2.95	1.8	2	0	0	0	0	0	3.32	2.65	0.0163	0.9960	2.95	3.816	1	1	0	0
67	2	0	0	0	3.09	2.74	0.0144	0.9969	2.98	1.601	2	0	0	0	0	0	3.38	2.74	0.0129	0.9969	2.98	3.49	1	1	0	0
68	1	0	0	0	3.15	2.83	0.0113	0.9976	3.01	1.42	3	0	0	0	0	0	3.44	2.83	0.0101	0.9976	3.01	3.186	1	1	0	0
69	2	0	0	0	3.21	2.91	0.0088	0.9982	3.04	1.257	2	0	0	0	0	0	3.51	2.91	0.0079	0.9982	3.04	2.904	1	1	0	0
70	2	0	0	0	3.26	3.00	0.0068	0.9987	3.07	1.111	1	1	0	0	0	0	3.57	3.00	0.0061	0.9987	3.07	2.642	1	1	0	0

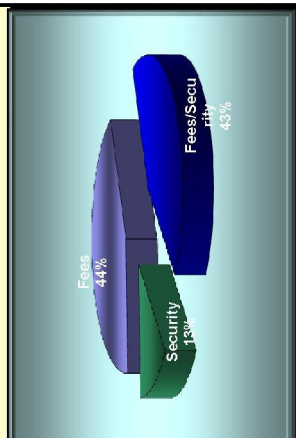


#	Data Analysis										Data Analysis												
	% Data					Normal Distribution					% Data					Normal Distribution							
	Visual	Auto	N/A	10.00%	11.43%	X	Z	$f(x)$	F(X)	Normal Fit	Visual	Auto	Other	14.28%	X	Z	$f(x)$	F(X)	Normal Fit	Histo	Norm	gram	al fit
%	75.57%	11.43%	N/A	10.00%	11.43%				100.0%	3.1	0.979	75.71%	10.00%	14.28%				100.0%	3.1	2.4	3.1	2.176	
	Histogram					Histogram					Histogram					Histogram							
	1	0				1	0			3.13	0.862	1	0		3.16	0.756			3.16	1.97			
	1	55				1	53			3.19	0.662	2	53		3.19	1.781			3.19	1.781			
	2	55				2	53			3.22	0.579	2	0		3.22	1.606			3.22	1.606			
	2	0				2	0			3.25	0.505	2	0		3.25	1.447			3.25	1.447			
	2	0				2	0			3.28	0.44	2	0		3.28	1.301			3.28	1.301			
	2	0				2	0			3.31	0.382	2	0		3.31	1.168			3.31	1.168			
	3	8				3	7			3.34	0.331	3	7		3.34	1.046			3.34	1.046			
	3	8				3	7			3.37	0.286	3	7		3.37	0.936			3.37	0.936			
	3	0				3	0			3.4	0.247	3	0		3.4	0.836			3.4	0.836			
	3	7				3	7			3.43	0.213	3	10		3.43	0.745			3.43	0.745			
	4	7				4	10			3.46	0.183	4	10		3.46	0.663			3.46	0.663			
	4	0				4	0			3.49	0.157	4	0		3.49	0.589			3.49	0.589			
										3.52	0.134				3.52	0.523			3.52	0.523			
										3.55	0.114				3.55	0.463			3.55	0.463			
										3.58	0.098				3.58	0.409			3.58	0.409			
										3.61	0.083				3.61	0.361			3.61	0.361			
										3.64	0.07				3.64	0.318			3.64	0.318			
										3.67	0.06				3.67	0.28			3.67	0.28			
										3.7	0.05				3.7	0.246			3.7	0.246			
										3.73	0.042				3.73	0.215			3.73	0.215			
										3.76	0.036				3.76	0.188			3.76	0.188			
										3.79	0.03				3.79	0.165			3.79	0.165			
										3.82	0.025				3.82	0.144			3.82	0.144			
										3.85	0.021				3.85	0.125			3.85	0.125			
										3.88	0.017				3.88	0.109			3.88	0.109			
										3.91	0.015				3.91	0.094			3.91	0.094			
										3.94	0.012				3.94	0.082			3.94	0.082			
										3.97	0.01				3.97	0.071			3.97	0.071			
										4	0.008				4	0.061			4	0.061			

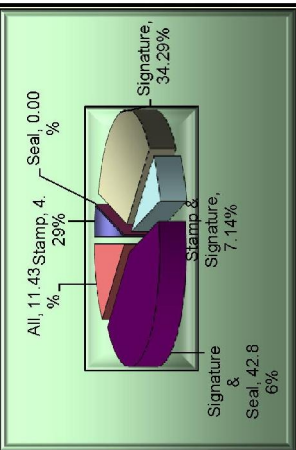
Questionnaire Data Analysis Sheet

Question	a- The stamps (similar to that of a post office stamp)?	d- Would the document be assumed to be legalised if there was one of the above missing?	Graphical Representation
	Purpose of Stamps	The Integral Part of Legalised Documents	
	Mean (LJ)	Mean (LJ)	
	Median	Median	
	Mode	Mode	
	Standard Deviation (σ)	Standard Deviation (σ)	
	Kurtosis	Kurtosis	
	Skewness	Skewness	
	Sample Variance	Sample Variance	
	Coefficient of Variation	Coefficient of Variation	
	Total Participant in This Question	Total Participant in This Question	
	Confidence Level (95.0%)	Confidence Level (95.0%)	
	Total Distribution	Total Distribution	
	Percentage of returns	Percentage of returns	

#	Data Analysis										Data Analysis									
	Data Analysis					Data Analysis					Data Analysis					Data Analysis				
	Security	Fees	Fees/Security	Stamp	Seal	Signature	Stamp & Signature	Signature	Stamp & Signature	All	Normal Fit	Histogram	Normal Fit	Histogram	Normal Fit	Histogram	Normal Fit	Histogram		
1	0	0	0	0	0	0	0	0	0	0	6	1	6.858	1	0.93	1	1.06	1.047		
2	0	1	0	0	0	0	0	0	0	0	6	0	1.03	7.222	4	0	1.12	1.175		
3	0	1	0	0	0	0	0	0	0	0	6	0	1.06	7.819	6	0	1.18	1.317		
4	0	0	1	0	0	0	0	0	0	0	5	0	1.09	8.45	5	0	1.24	1.472		
5	0	1	0	0	0	0	0	0	0	0	3	0	1.12	9.114	3	0	1.3	1.642		
6	0	1	0	0	0	0	0	0	0	0	5	0	1.15	9.811	5	0	1.36	1.827		
7	0	0	1	0	0	0	0	0	0	0	3	0	1.18	10.54	3	0	1.42	2.029		
8	0	1	0	0	0	0	0	0	0	0	4	0	1.21	11.31	4	0	1.48	2.247		
9	0	0	1	0	0	0	0	0	0	0	4	0	1.24	12.11	4	0	1.54	2.484		
10	0	0	1	0	0	0	0	0	0	0	4	0	1.27	12.93	4	0	1.6	2.74		
11	0	1	0	0	0	0	0	0	0	0	5	0	1.3	13.8	5	0	1.66	3.015		
12	1	0	0	0	0	0	0	0	0	0	5	0	1.33	14.69	5	0	1.72	3.31		
13	0	1	0	0	0	0	0	0	0	0	5	0	1.36	15.6	5	0	1.78	3.626		
14	0	0	1	0	0	0	0	0	0	0	5	0	1.39	16.55	5	0	1.84	3.963		
15	0	0	0	0	0	0	0	0	0	0	5	0	1.42	17.52	5	0	1.9	4.322		
16	0	1	0	0	0	0	0	0	0	0	5	0	1.45	18.51	5	0	1.96	4.703		
17	0	1	0	0	0	0	0	0	0	0	4	0	1.48	19.52	4	0	2.02	5.106		
18	1	0	0	0	0	0	0	0	0	0	5	0	1.51	20.54	5	0	2.08	5.531		
19	0	0	1	0	0	0	0	0	0	0	6	0	1.54	21.58	6	0	2.14	5.978		
20	0	1	0	0	0	0	0	0	0	0	4	0	1.57	22.63	4	0	2.2	6.447		
21	0	1	0	0	0	0	0	0	0	0	3	0	1.6	23.69	3	0	2.26	6.936		
22	1	0	0	0	0	0	0	0	0	0	5	0	1.63	24.75	5	0	2.32	7.447		
23	0	1	0	0	0	0	0	0	0	0	3	0	1.66	25.81	3	0	2.38	7.976		
24	0	1	0	0	0	0	0	0	0	0	3	0	1.69	26.86	3	0				



#	Data Analysis				#	Data Analysis				#	Data Analysis				Normal Fit Histogram Normal Fit
	Security		% Data			Stamp		% Data			Stamp & Signature		All		
	Security	Fees	Fees/Security	Normal Fit Histogram Normal Fit		Stamp	Seal	Signature	Stamp & Signature		Normal Fit Histogram Normal Fit				
25	0	1	0	1.72	27.9	3	0	0	1	0	0	0	2.44	8.525	
26	0	0	1	1.75	28.93	6	0	0	0	0	0	0	2.5	9.09	
27	0	1	0	1.78	29.95	3	0	0	1	0	0	0	2.56	9.671	
28	0	1	1	1.81	30.93	3	0	0	1	0	0	0	2.62	10.27	
29	0	1	0	1.84	31.9	5	0	0	1	0	0	0	2.68	10.87	
30	1	0	0	1.87	32.83	3	0	0	1	0	0	0	2.74	11.49	
31	0	1	0	1.9	33.72	6	0	0	0	0	0	1	2.8	12.12	
32	1	0	0	1.93	34.57	3	0	0	1	0	0	0	2.86	12.75	
33	0	1	0	1.96	35.38	3	0	0	1	0	0	0	2.92	13.38	
34	0	1	0	1.99	36.14	5	0	0	1	0	0	0	2.98	14.02	
35	0	1	1	2.02	36.85	3	0	0	1	0	0	0	3.04	14.65	
36	0	1	0	2.05	37.5	5	0	0	0	0	0	1	3.1	15.27	
37	0	1	1	2.08	38.09	3	1	0	0	0	0	0	3.16	15.89	
38	0	1	0	2.11	38.61	1	1	0	0	0	0	0	3.22	16.49	
39	0	1	0	2.14	39.07	5	0	0	0	0	0	1	3.28	17.08	
40	0	0	1	2.17	39.46	5	0	0	0	0	0	1	3.34	17.65	
41	0	1	1	2.2	39.78	6	0	0	0	0	0	1	3.4	18.19	
42	0	1	0	2.23	40.03	5	0	0	0	0	0	1	3.46	18.72	
43	0	0	1	2.26	40.2	5	0	0	0	0	0	1	3.52	19.21	
44	0	0	1	2.29	40.3	5	0	0	0	0	0	1	3.58	19.67	
45	0	1	0	2.32	40.33	3	0	0	1	0	0	0	3.64	20.1	
46	0	0	1	2.35	40.27	6	0	0	0	0	0	1	3.7	20.49	
47	0	0	1	2.38	40.15	5	0	0	0	0	0	1	3.76	20.85	
48	1	0	0	2.41	39.95	3	0	0	1	0	0	0	3.82	21.16	
49	0	1	0	2.44	39.67	5	0	0	0	0	0	1	3.88	21.42	
50	0	1	0	2.47	39.32	3	0	0	1	0	0	0	3.94	21.65	
51	0	0	1	2.5	38.9	5	0	0	0	0	0	1	4	21.82	
52	0	0	1	2.53	38.42	5	0	0	0	0	0	1	4.06	21.95	
53	0	0	1	2.56	37.87	5	0	0	0	0	0	1	4.12	22.03	
54	1	0	0	2.59	37.26	3	0	0	1	0	0	0	4.18	22.06	
55	0	0	1	2.62	36.58	5	0	0	0	0	0	1	4.24	22.04	
56	0	0	1	2.65	35.86	3	0	0	1	0	0	0	4.3	21.97	
57	0	0	1	2.68	35.08	5	0	0	0	0	0	1	4.36	21.85	
58	0	1	0	2.71	34.25	3	0	0	1	0	0	0	4.42	21.68	
59	0	1	0	2.74	33.38	6	0	0	0	0	0	1	4.48	21.47	
60	0	1	1	2.77	32.48	3	0	0	1	0	0	0	4.54	21.21	
61	0	1	0	2.8	31.53	5	0	0	0	0	0	1	4.6	20.91	
62	1	0	0	2.83	30.56	5	0	0	0	0	0	1	4.66	20.56	
63	0	0	1	2.86	29.56	5	0	0	0	0	0	1	4.72	20.18	
64	0	1	0	2.89	28.54	3	0	0	1	0	0	0	4.78	19.76	
65	0	0	1	2.92	27.51	5	0	0	0	0	0	1	4.84	19.3	
66	0	0	1	2.95	26.46	1	1	0	0	0	0	0	4.9	18.81	
67	1	0	0	2.98	25.4	3	0	0	1	0	0	0	4.96	18.3	

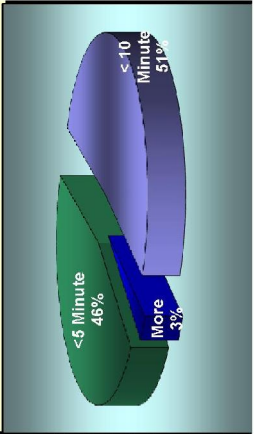
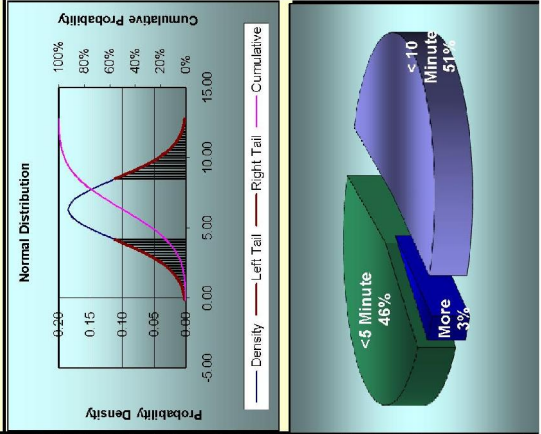


#	Date	Data Analysis				Normal Fit	Histogram	Normal Fit	Histogram	Normal Fit						
		% Data		% Data							Normal Fit	Histogram	Normal Fit			
		Security	Fees	Stamp	Seal									Signature	Stamp & Signature	Signature & Stamp
68	3	0	0	0	0	3	3.01	24.35	0	0	0	0	0	5.02	17.75	
69	3	0	0	0	0	1	3.04	23.29	1	0	0	0	0	5.08	17.19	
70	3	0	0	0	0	5	3.07	22.23	5	0	0	0	1	5.14	16.6	
%		12.86%	42.86%	42.86%	42.86%	98.6%	3.1	21.19	4.28%	0.00%	34.29%	7.14%	42.86%	5.2	16	
		Histogram		Histogram		Histogram		Histogram		Histogram		Histogram		Histogram		
		1	0	0	0	1	0	0	1	0	0	0	0	5.26	15.39	
		1	9	9	9	1	3.16	19.13	3.22	17.14	3.25	16.18	3.28	15.24	5.32	14.77
		2	9	9	9	2	3.25	16.18	2	3	3.28	15.25	3.31	14.34	5.38	14.14
		2	0	0	0	2	3.31	14.34	2	0	2	14.34	3.34	13.46	5.44	13.5
		2	30	30	30	2	3.34	13.46	2	0	2	13.46	3.37	12.61	5.5	12.87
		3	30	30	30	3	3.37	12.61	3	0	3	12.61	3.4	11.8	5.56	12.24
		3	0	0	0	3	3.4	11.8	3	0	3	11.8	3.43	11.01	5.62	11.61
		3	31	31	31	3	3.43	11.01	4	24	3.46	10.26	3.49	10.26	5.68	10.99
		4	31	31	31	4	3.46	10.26	4	0	3.49	9.542	3.52	8.857	5.74	10.38
		4	0	0	0	4	3.49	9.542	4	0	4	0	3.52	8.205	5.86	9.2
		4	0	0	0	4	3.52	8.857	4	5	3.55	8.205	3.58	7.588	5.92	8.631
		4	0	0	0	5	3.55	8.205	5	5	3.58	7.588	3.61	7.004	5.98	8.079
		4	0	0	0	5	3.58	7.588	5	0	3.61	7.004	3.64	6.452	6.04	7.546
		4	0	0	0	6	3.61	7.004	6	30	3.64	6.452	3.67	5.933	6.1	7.032
		4	0	0	0	6	3.64	6.452	6	0	3.67	5.933	3.7	5.445	6.16	6.538
		4	8	8	8	7	3.67	5.933	7	8	3.7	5.445	3.73	4.989	6.22	6.066
		4	8	8	8	7	3.7	5.445	7	8	3.73	4.989	3.76	4.561	6.28	5.615
		4	8	8	8	7	3.73	4.989	7	0	3.76	4.561	3.79	4.163	6.34	5.185
		4	8	8	8	7	3.76	4.561	7	0	3.79	4.163	3.82	3.792	6.4	4.778
		4	8	8	8	7	3.79	4.163	7	0	3.82	3.792	3.85	3.448	6.46	4.383
		4	8	8	8	7	3.82	3.792	7	0	3.85	3.448	3.88	3.129	6.52	4.03
		4	8	8	8	7	3.85	3.448	7	0	3.88	3.129	3.91	2.835	6.58	3.689
		4	8	8	8	7	3.88	3.129	7	0	3.91	2.835	3.94	2.563	6.64	3.369
		4	8	8	8	7	3.91	2.835	7	0	3.94	2.563	3.97	2.313	6.7	3.07
		4	8	8	8	7	3.94	2.563	7	0	3.97	2.313	4	2.083	6.76	2.791
		4	8	8	8	7	3.97	2.313	7	0	4	2.083	6.82	2.531	6.88	2.291
		4	8	8	8	7	4	2.083	7	0	4	2.083	6.94	2.069	6.94	2.069
		4	8	8	8	7	4	2.083	7	0	4	2.083	7	1.864	7	1.864

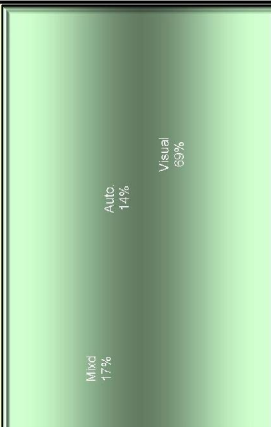
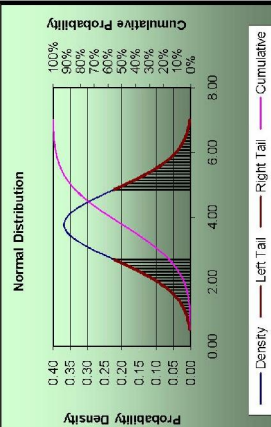
Questionnaire Data Analysis Sheet

Question	14- What is the average time taken to legalise one document? (days, hours, minutes)	16- How would the Ministry of Foreign Affairs recognise the authenticity of a legalised document?	Graphical Representation																																																																					
	Time to legalise a document	Recognition method	Graph Setup																																																																					
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Mean (μ)</td><td>6.314</td><td>Mean (μ)</td><td>3.757</td></tr> <tr><td>Median</td><td>6.000</td><td>Median</td><td>4.000</td></tr> <tr><td>Mode</td><td>5.000</td><td>Mode</td><td>4.000</td></tr> <tr><td>Standard Deviation (σ)</td><td>2.157</td><td>Standard Deviation (σ)</td><td>1.083</td></tr> <tr><td>Kurtosis</td><td>2.471</td><td>Kurtosis</td><td>0.169</td></tr> <tr><td>Skewness</td><td>1.185</td><td>Skewness</td><td>-0.836</td></tr> <tr><td>Sample Variance</td><td>4.653</td><td>Sample Variance</td><td>1.172</td></tr> <tr><td>Coefficient of Variation</td><td>34.163</td><td>Coefficient of Variation</td><td>28.815</td></tr> <tr><td>Total Participant in This Question</td><td>70</td><td>Total Participant in This Question</td><td>70</td></tr> <tr><td>Confidence Level (95.0%)</td><td>0.50534</td><td>Confidence Level (95.0%)</td><td>0.25361</td></tr> <tr><td>Total Distribution</td><td>133</td><td>Total Distribution</td><td>133</td></tr> <tr><td>Percentage of returns</td><td>52.63%</td><td>Percentage of returns</td><td>52.63%</td></tr> <tr><td>X_{min}=</td><td>0.16</td><td>X_{max}=</td><td>12.8</td></tr> <tr><td>X_{min}=</td><td>0.188</td><td>X_{max}=</td><td>7.005</td></tr> <tr><td>Step=</td><td></td><td>Step=</td><td>0.094</td></tr> </table>	Mean (μ)	6.314	Mean (μ)	3.757	Median	6.000	Median	4.000	Mode	5.000	Mode	4.000	Standard Deviation (σ)	2.157	Standard Deviation (σ)	1.083	Kurtosis	2.471	Kurtosis	0.169	Skewness	1.185	Skewness	-0.836	Sample Variance	4.653	Sample Variance	1.172	Coefficient of Variation	34.163	Coefficient of Variation	28.815	Total Participant in This Question	70	Total Participant in This Question	70	Confidence Level (95.0%)	0.50534	Confidence Level (95.0%)	0.25361	Total Distribution	133	Total Distribution	133	Percentage of returns	52.63%	Percentage of returns	52.63%	X _{min} =	0.16	X _{max} =	12.8	X _{min} =	0.188	X _{max} =	7.005	Step=		Step=	0.094	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Graph Range</td><td></td></tr> <tr><td>X_{min}= μ - 3*σ</td><td></td></tr> <tr><td>X_{max}= μ + 3*σ</td><td></td></tr> <tr><td>Step= (X_{max}-X_{min})/total</td><td></td></tr> <tr><td>Z = (X - μ) / σ</td><td></td></tr> </table> $f(x) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$	Graph Range		X _{min} = μ - 3*σ		X _{max} = μ + 3*σ		Step= (X _{max} -X _{min})/total		Z = (X - μ) / σ	
Mean (μ)	6.314	Mean (μ)	3.757																																																																					
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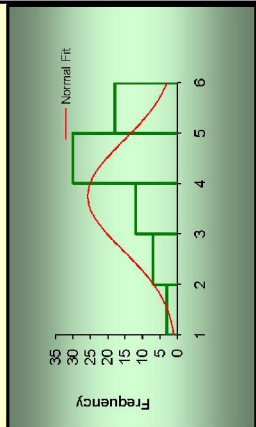
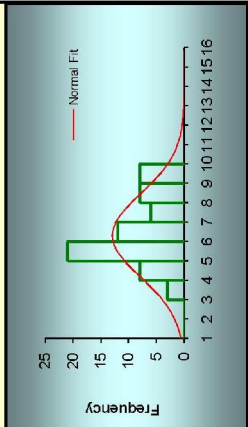
#	Data Analysis										Data Analysis										Normal Fit				
	% Data					Normal Distribution					% Data					Normal Distribution									
	Data	<5 Minutes	5-10 Minutes	More	Auto	Visual	Mixd	X	Z	f(x)	F(x)	Illsto gram	Norm al fit	Data	<5 Minutes	5-10 Minutes	More	Auto	Visual	Mixd		X	Z	f(x)	F(x)
1	9	0	1	0	0	1	-0.16	-3.00	0.0021	0.0013	0.0013	1	1.007	0	0	0	0	0	1	0.51	-3.00	0.0041	0.0013	1	1.007
2	9	0	1	0	0	0	0.03	-2.91	0.0027	0.0018	0.0018	2	1.051	0	0	0	0	0	0	0.60	-2.91	0.0053	0.0018	1.051	1.132
3	15	0	0	1	0	0	0.22	-2.83	0.0034	0.0024	0.0024	3	1.1269	0	0	0	0	0	0	0.70	-2.83	0.0068	0.0024	1.1269	1.42
4	5	1	0	0	0	0	0.41	-2.74	0.0043	0.0031	0.0031	4	1.151	0	0	0	0	0	0	0.79	-2.74	0.0087	0.0031	1.151	1.42
5	8	0	1	0	0	0	0.59	-2.65	0.0055	0.0040	0.0040	5	1.189	0	0	0	0	0	0	0.89	-2.65	0.0109	0.0040	1.2	1.585
6	6	0	1	0	0	0	0.78	-2.57	0.0069	0.0052	0.0052	6	1.238	0	0	0	0	0	0	0.98	-2.57	0.0137	0.0052	1.25	1.766
7	5	1	0	0	0	0	0.97	-2.48	0.0086	0.0066	0.0066	7	1.295	0	0	0	0	0	0	1.07	-2.48	0.0171	0.0066	1.3	1.963
8	9	0	1	0	0	0	1.16	-2.39	0.0106	0.0084	0.0084	8	1.362	0	0	0	0	0	0	1.17	-2.39	0.0211	0.0084	1.35	2.178
9	5	1	0	0	0	0	1.34	-2.30	0.0130	0.0106	0.0106	9	1.441	0	0	0	0	0	0	1.26	-2.30	0.0259	0.0106	1.4	2.411
10	9	0	1	0	0	0	1.53	-2.22	0.0158	0.0133	0.0133	10	1.526	0	0	0	0	0	0	1.36	-2.22	0.0315	0.0133	1.45	2.663
11	5	1	0	0	0	0	1.72	-2.13	0.0191	0.0166	0.0166	11	1.618	0	0	0	0	0	0	1.45	-2.13	0.0381	0.0166	1.5	2.935
12	9	0	1	0	0	0	1.91	-2.04	0.0229	0.0205	0.0205	12	1.725	0	0	0	0	0	0	1.54	-2.04	0.0457	0.0205	1.55	3.228
13	4	1	0	0	0	0	2.08	-1.96	0.0273	0.0252	0.0252	13	1.843	0	0	0	0	0	0	1.64	-1.96	0.0544	0.0252	1.6	3.543
14	3	1	0	0	0	0	2.28	-1.87	0.0322	0.0308	0.0308	14	1.973	0	0	0	0	0	0	1.73	-1.87	0.0642	0.0308	1.65	3.881
15	5	1	0	0	0	0	2.47	-1.78	0.0378	0.0373	0.0373	15	2.111	0	0	0	0	0	0	1.83	-1.78	0.0752	0.0373	1.7	4.241
16	10	0	1	0	0	0	2.66	-1.70	0.0439	0.0450	0.0450	16	2.254	0	0	0	0	0	0	1.92	-1.70	0.0875	0.0450	1.75	4.625
17	5	1	0	0	0	0	2.84	-1.61	0.0507	0.0538	0.0538	17	2.401	0	0	0	0	0	0	2.02	-1.61	0.1010	0.0538	1.8	5.034
18	5	1	0	0	0	0	3.03	-1.52	0.0581	0.0640	0.0640	18	2.552	0	0	0	0	0	0	2.11	-1.52	0.1158	0.0640	1.85	5.466
19	11	0	0	1	0	0	3.22	-1.43	0.0661	0.0757	0.0757	19	2.708	0	0	0	0	0	0	2.20	-1.43	0.1316	0.0757	1.9	5.923
20	8	0	1	0	0	0	3.41	-1.35	0.0746	0.0889	0.0889	20	2.869	0	0	0	0	0	0	2.30	-1.35	0.1486	0.0889	1.95	6.404
21	8	0	1	0	0	0	3.59	-1.26	0.0835	0.1037	0.1037	21	3.034	0	0	0	0	0	0	2.39	-1.26	0.1694	0.1037	2	6.91
22	9	0	1	0	0	0	3.78	-1.17	0.0928	0.1202	0.1202	22	3.203	0	0	0	0	0	0	2.49	-1.17	0.1850	0.1202	2.05	7.44
23	10	0	1	0	0	0	3.97	-1.09	0.1024	0.1385	0.1385	23	3.377	0	0	0	0	0	0	2.58	-1.09	0.2041	0.1385	2.1	7.984
24	9	0	1	0	0	0	4.16	-1.00	0.1122	0.1587	0.1587	24	3.551	0	0	0	0	0	0	2.67	-1.00	0.2235	0.1587	2.15	8.57



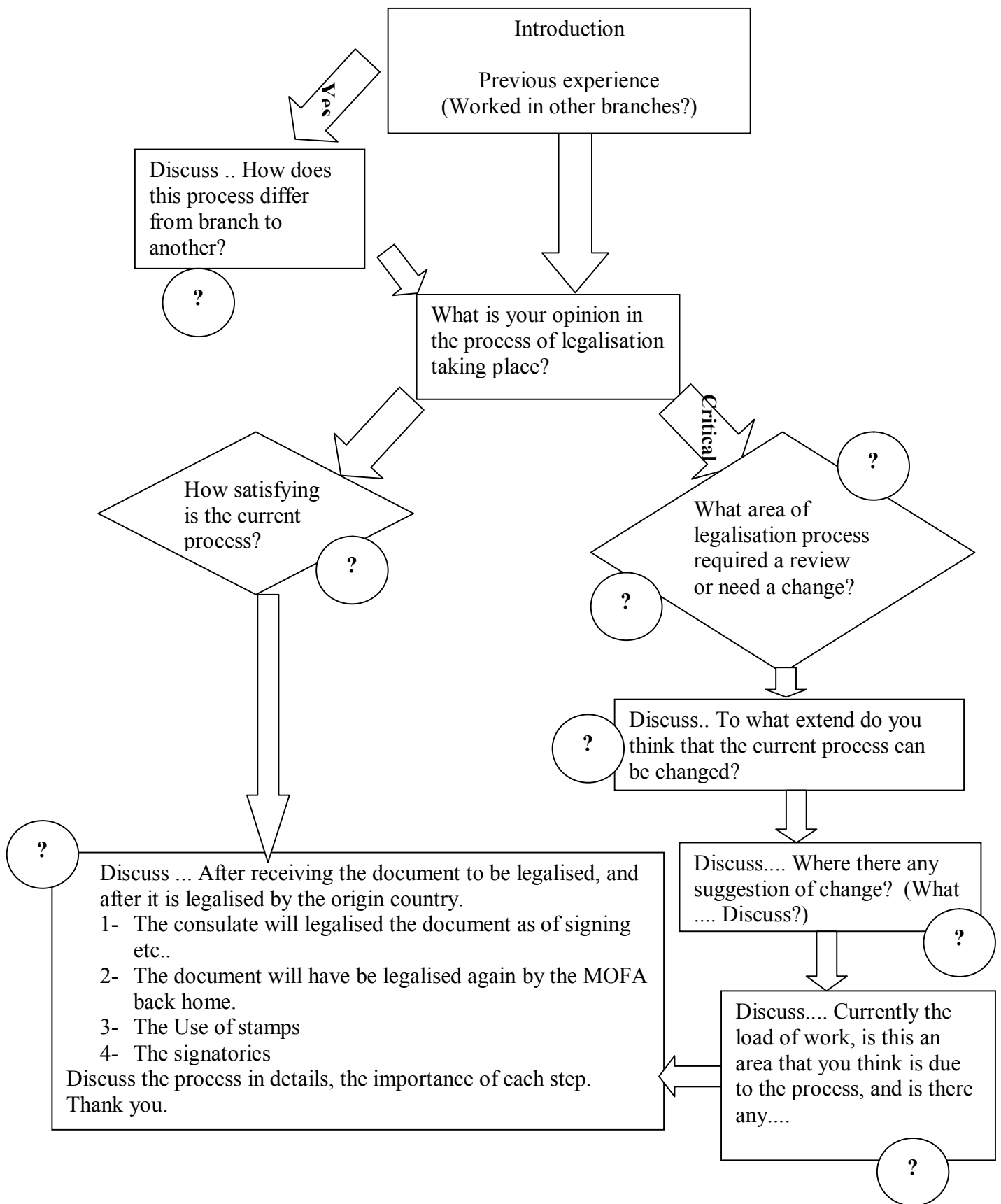
#	Data Analysis										Data Analysis										Data
	% Data					Normal Distribution					Normal Distribution					Normal Distribution					
	<5 Minute	<10 Minute	More	X	Z	f(x)	F(x)	Histo	Normal	Fit	Visual	Mixed	Auto	X	Z	f(x)	F(x)	Histo	Normal	Fit	
25	3	1	0	4.34	-0.91	0.1219	0.1806	4.6	9.44	5	1	0	0	2.77	-0.91	0.2429	0.1806	2.2	9.169		
26	6	0	1	4.53	-0.83	0.1315	0.2044	4.75	9.953	5	1	0	0	2.86	-0.83	0.2620	0.2044	2.25	9.788		
27	8	0	1	4.72	-0.74	0.1407	0.2299	4.9	10.44	4	1	0	0	2.96	-0.74	0.2804	0.2299	2.3	10.43		
28	9	0	1	4.91	-0.65	0.1495	0.2571	5.05	10.9	2	0	0	1	3.05	-0.65	0.2979	0.2571	2.35	11.08		
29	5	1	0	5.10	-0.57	0.1576	0.2860	5.2	11.33	4	1	0	0	3.15	-0.57	0.3141	0.2860	2.4	11.76		
30	6	0	1	5.28	-0.48	0.1650	0.3162	5.35	11.71	5	1	0	0	3.24	-0.48	0.3287	0.3162	2.45	12.44		
31	5	1	0	5.47	-0.39	0.1713	0.3478	5.5	12.06	4	1	0	0	3.33	-0.39	0.3413	0.3478	2.5	13.14		
32	4	1	0	5.66	-0.30	0.1766	0.3804	5.65	12.35	4	1	0	0	3.43	-0.30	0.3518	0.3804	2.55	13.85		
33	6	0	1	5.85	-0.22	0.1806	0.4140	5.8	12.58	5	1	0	0	3.52	-0.22	0.3599	0.4140	2.6	14.57		
34	8	0	1	6.03	-0.13	0.1834	0.4481	5.95	12.76	4	1	0	0	3.62	-0.13	0.3654	0.4481	2.65	15.29		
35	4	1	0	6.22	-0.04	0.1848	0.4827	6.1	12.88	4	1	0	0	3.71	-0.04	0.3682	0.4827	2.7	16.01		
36	5	1	0	6.41	0.04	0.1848	0.5173	6.25	12.94	3	0	1	0	3.80	0.04	0.3682	0.5173	2.75	16.73		
37	6	0	1	6.60	0.13	0.1834	0.5519	6.4	12.94	5	1	0	0	3.90	0.13	0.3654	0.5519	2.8	17.45		
38	4	1	0	6.78	0.22	0.1806	0.5860	6.55	12.87	4	1	0	0	3.99	0.22	0.3599	0.5860	2.85	18.16		
39	5	1	0	6.97	0.30	0.1766	0.6196	6.7	12.74	5	1	0	0	4.09	0.30	0.3518	0.6196	2.9	18.85		
40	6	0	1	7.16	0.39	0.1713	0.6522	6.85	12.55	5	1	0	0	4.18	0.39	0.3413	0.6522	2.95	19.54		
41	8	0	1	7.35	0.48	0.1650	0.6838	7	12.31	3	0	1	0	4.27	0.48	0.3287	0.6838	3	20.2		
42	5	1	0	7.53	0.57	0.1576	0.7140	7.15	12.01	5	1	0	0	4.37	0.57	0.3141	0.7140	3.05	20.84		
43	7	0	1	7.72	0.65	0.1495	0.7429	7.3	11.66	4	1	0	0	4.46	0.65	0.2979	0.7429	3.1	21.45		
44	5	1	0	7.91	0.74	0.1407	0.7701	7.45	11.27	2	0	0	1	4.56	0.74	0.2804	0.7701	3.15	22.04		
45	6	0	1	8.10	0.83	0.1315	0.7966	7.6	10.84	3	0	1	0	4.65	0.83	0.2620	0.7966	3.2	22.6		
46	7	0	1	8.28	0.91	0.1219	0.8194	7.75	10.37	5	1	0	0	4.75	0.91	0.2429	0.8194	3.25	23.11		
47	6	0	1	8.47	1.00	0.1122	0.8413	7.9	9.861	1	0	0	1	4.84	1.00	0.2235	0.8413	3.3	23.59		
48	5	1	0	8.66	1.09	0.1024	0.8615	8.05	9.366	4	1	0	0	4.93	1.09	0.2041	0.8615	3.35	24.03		
49	4	1	0	8.85	1.17	0.0928	0.8798	8.2	8.835	4	1	0	0	5.03	1.17	0.1850	0.8798	3.4	24.43		
50	5	1	0	9.03	1.26	0.0835	0.8963	8.35	8.294	3	0	1	0	5.12	1.26	0.1694	0.8963	3.45	24.78		
51	6	0	1	9.22	1.35	0.0746	0.9111	8.5	7.748	5	1	0	0	5.22	1.35	0.1486	0.9111	3.5	25.08		
52	7	0	1	9.41	1.43	0.0661	0.9243	8.65	7.204	5	1	0	0	5.31	1.43	0.1316	0.9243	3.55	25.33		
53	8	0	1	9.60	1.52	0.0581	0.9360	8.8	6.665	5	1	0	0	5.40	1.52	0.1158	0.9360	3.6	25.52		
54	5	1	0	9.78	1.61	0.0507	0.9462	8.95	6.137	5	1	0	0	5.50	1.61	0.1010	0.9462	3.65	25.67		
55	7	0	1	9.97	1.70	0.0439	0.9550	9.1	5.623	4	1	0	0	5.59	1.70	0.0875	0.9550	3.7	25.78		
56	6	0	1	10.16	1.78	0.0378	0.9627	9.25	5.128	3	0	1	0	5.69	1.78	0.0752	0.9627	3.75	25.79		
57	6	0	1	10.35	1.87	0.0322	0.9692	9.4	4.654	3	0	1	0	5.78	1.87	0.0642	0.9692	3.8	25.77		
58	3	1	0	10.53	1.96	0.0273	0.9748	9.55	4.203	4	1	0	0	5.88	1.96	0.0544	0.9748	3.85	25.7		
59	4	1	0	10.72	2.04	0.0229	0.9795	9.7	3.778	4	1	0	0	5.97	2.04	0.0457	0.9795	3.9	25.57		
60	5	1	0	10.91	2.13	0.0191	0.9834	9.85	3.379	3	0	1	0	6.06	2.13	0.0381	0.9834	3.95	25.39		
61	5	1	0	11.10	2.22	0.0158	0.9867	10	3.008	4	1	0	0	6.16	2.22	0.0315	0.9867	4	25.15		
62	6	0	1	11.29	2.30	0.0130	0.9894	10.15	2.664	3	0	1	0	6.25	2.30	0.0259	0.9894	4.05	24.87		
63	5	1	0	11.47	2.39	0.0106	0.9916	10.3	2.349	4	1	0	0	6.35	2.39	0.0211	0.9916	4.1	24.53		
64	8	0	1	11.66	2.48	0.0086	0.9934	10.45	2.061	4	1	0	0	6.44	2.48	0.0171	0.9934	4.15	24.15		
65	5	1	0	11.85	2.57	0.0069	0.9948	10.6	1.799	4	1	0	0	6.53	2.57	0.0137	0.9948	4.2	23.72		
66	4	1	0	12.04	2.65	0.0055	0.9960	10.75	1.563	5	1	0	0	6.63	2.65	0.0109	0.9960	4.25	23.26		
67	7	0	1	12.22	2.74	0.0043	0.9969	10.9	1.352	5	1	0	0	6.72	2.74	0.0087	0.9969	4.3	22.75		
68	4	1	0	12.41	2.83	0.0034	0.9976	11.05	1.163	5	1	0	0	6.82	2.83	0.0068	0.9976	4.35	22.2		



#	Data	Data Analysis						Data Analysis												
		% Data			Normal Distribution			% Data			Normal Distribution									
		<5 Minute	<10 Minute	More	X	Z	f(x)	F(x)	Histo gram	Normal Fit	Visual	Mixd	Auto	X	Z	f(x)	F(x)	Histo gram	Normal Fit	
69	7	0	1	0	12.60	2.91	0.0027	0.9982	11.2	0.996	3	0	1	0	6.91	2.91	0.0053	0.9982	4.4	21.63
70	5	1	0	0	12.79	3.00	0.0021	0.9987	11.35	0.849	4	1	0	0	7.00	3.00	0.0041	0.9987	4.45	21.02
%		45.71%	51.43%	2.86%			100.0%		11.5	0.72		66.57%	17.14%	14.29%			100.0%		4.5	20.36
		Histogram							11.65	0.608		Histogram							4.55	19.73
		1	0						11.8	0.51		1	0						4.6	19.05
		1	0						11.95	0.427		1	0						4.65	18.36
		2	0						12.1	0.355		1	3						4.7	17.65
		2	0						12.25	0.294		2	3						4.75	16.94
		2	0						12.4	0.242		2	0						4.8	16.22
		2	0						12.55	0.198		2	0						4.85	15.5
		3	0						12.7	0.162		2	7						4.9	14.78
		3	0						12.85	0.131		3	7						4.95	14.06
		3	0						13	0.106		3	0						5	13.35
		3	3						13.15	0.085		3	12						5.05	12.64
		4	3						13.3	0.068		4	12						5.1	11.95
		4	0						13.45	0.054		4	0						5.15	11.27
		4	8						13.6	0.043		4	30						5.2	10.61
		5	8						13.75	0.034		5	30						5.25	9.969
		5	0						13.9	0.027		5	0						5.3	9.344
		5	21						14.05	0.021		5	18						5.35	8.739
		6	21						14.2	0.016		5	0						5.4	8.156
		6	0						14.35	0.013		6	18						5.45	7.596
		6	12						14.5	0.01		6	0						5.5	7.059
		7	12						14.65	0.007		6	12						5.55	6.547
		7	0						14.8	0.006		7	0						5.6	6.058
		7	6						14.95	0.004		7	6						5.65	5.594
		8	6						15.1	0.003		8	6						5.7	5.155
		8	0						15.25	0.002		8	0						5.75	4.74
		8	8						15.4	0.002		8	8						5.8	4.349
		9	8						15.55	0.001		8	8						5.85	3.981
		9	0						15.7	0.001		9	0						5.9	3.637
		10	8						15.85	7E-04		10	8						5.95	3.316
		10	0									10	0						6	3.017



Interview schematic diagram



⊙ A further analytical and/or clarification question depending on answers or discussion

Interview scripts extracts

Script1:

Q : Introduction, the business of document legalisation is one of major section in the consulate of UAE, if I want to legalise my son's Birth Certificate, what steps do I have to do?

A: There are different type of document, but as we stands we have to receive the document (Birth etc..) legalised or attested by the ministry of foreign affaire (Foreign and common wealth),

It is only after that we can certify (legalise) that this document is signed by the Ministry of Foreign Affairs of the original country.

Then, and after we signed the document, you may certify it in the Ministry of Foreign Affairs back in UAE, the document at this stage assumed legal and can be used in the Government Department.

In this case (Birth certificate) may be presented in the Ministry of Health.

Q: You mentioned different type of documents, can I have an idea?, I mean will the steps changes for different documents?

A: What I have explained is the personal documents, but there are commercial document such as trade invoices, these type of documents, will have a slight change in the steps. Trade invoices need to be issued with a certificate of origin, the fees on this type of document may vary depending on the value of the invoice, after legalising this type of documents; it can be used in the port to release the goods.

Q: I see that you did not mention the step for which you said earlier to legalise the document in the Ministry of Foreign Affairs!

A: Yes, This is the only type of document that needs no further legalisation in the country.

Q: Why is there a difference between commercial invoices and other documents (as commercial invoices need no further authentication unlike others)

A: Airports and ports are known and limited. Having to employ a specialised person to do that is easy, the fact that commercial invoices are used once unlike other documents such as certificates and other personal documents which can be used for a life time.

Q: Do you think MOFA step, that is, MOFA to authenticate the document is necessarily?

A: It appears that this step is not as necessary as there are some documents going beyond this step (such as business invoices) and the reason for that is that we distribute the Consul (appointed personnel) to the ports/airports in the country and therefore it is recognised at the point of entry.

Q: I see that as part of the process, the document must be affixed with a stamp, is this an integral part of the process?

A: the stamp is used to as the value of the fees, and hence this is what we are accounted financially.

Q: Do you think it is feasible to change these stamps and would the MOFI accept any changes?”,

A: Yes, the only reason that we use these stamps is for the Ministry of Finance & Industry to calculate the legalisation income. If they issue another stamp, we will use it (as it happened frequently) so the changes you are asking for are merely a shape as far as MOFI is concerned. The legalisation authentication is not the use of stamps, the stamps are for the purpose of finance that the Ministry of Finance & Industry need to account for the income of the government.

Q: When looking at the documents, how would you know that this document is genuinely legalised?

A: By the signature, the document will be affixed by stamps, seal and signature, the signature are for known personnel and hence this three area shows the documents if legalised.

Q ; What is your opining of the current legalisation process?

A : I am sure your are aware of the process, it is as you can see, repetitive work, I can not see any changes in this process since I joined, I can only describe the process as “it cannot cope with current business climate. The current process is so old that it may be difficult to convince some heads of departments in the UAE to make a change.

Q: What area or steps in the process you think needs a review or change?

A: The process as whole, the process rely on a manual work, there is no steps in this process that can be changed without touching another. The document needs to be checked and signed, I see no other way of changes, and we are tied with the instruction given by MOFA.

I am sure as you are in the business of commuting you may suggest a way or a change using the computer can help us to perform this process in a better way.

Script 2 :

Q: Introduction, the business of document legalisation is one of major section in the consulate of UAE, if I want to legalise a document what are the steps to do?

A: depending of the type of document you want to legalised, if personal (private) such as birth or academic certificate, it has to be attested by the ministry of foreign affaire (Foreign and common wealth), when done we then legalise the document.

By you arriving in the UAE you need to certify it in the Ministry of Foreign Affairs back in UAE. You then proceed to submit it to the department involved.

Q: You mentioned different type of documents, can I have an idea?, I mean will the steps changes for different documents?

A: that is why I said if you have a personal document, but otherwise if you have a commercial document such as invoice, then the cost will change according to the invoice value, the trade invoices have to be submitted with a certificate of origin from the Arab-British Chamber of Commerce, after legalising this type of documents; the goods can be released from the port at the country.

Q: Why is there a difference between commercial invoices and other documents (as commercial invoices need no further authentication unlike others)

A: That how the process is known to be.

Q: Do you think MOFA step, that is, MOFA to authenticate the document is necessarily?

A: how else the receiving party can authenticate that this document is legalised, the receiving part such as ministry of health, will only recognise the MOFA seal and signature as it is inside the country, and MOFA recognise us.

Q: I see that as part of the process, the document must be affixed with a stamp, is this an integral part of the process?

A: usually we affix a stamp to the document to identify the fee paid, and this fee is really paid to the Ministry of finance, but in so circumstances we may legalise a document without a fee and hence it will be without a stamp.

Q: Do you think it is feasible to change these stamps and would the MOFI accept any changes?,"

A: that is a good question, I personally do not like this, but there is no other way of accountability to the ministry of finance to know what tax and fees been paid.

Q: When looking at the documents, how would you know that this document is genuinely legalised?

A: The documents have many marks, one of which is the stamp but we are not only relying on the stamps here you can see the signature and seal all will amount to the authenticity of the legalised documents.

Q; What is your opining of the current legalisation process?

A: I think it is a long process, and outdated, but as a routine it is doing its job.

Appendix D: Document Legalisation Samples

مجاني
GRATIS

Embassy of
The Kingdom of Bahrain
LONDON

سفارة
مملكة البحرين
الندن

3158

dated 5-11-2009

approve the stamp
Signature of A. Santini

With out any re- sponsibilities from
the Mission later of what this document co-
ntains

Sample 1: Document Legalised without Stamps

This document, even though legalised, no stamp appeared on the document. This proves that a stamp is not an integrated part of the legalisation process.

مجاناً
GRATIS

Embassy of The Kingdom of Bahrain LONDON		مملكة البحرين لندن	
No.	٢١٥٩	الرقم	٢١٥٩
Dated	5.11.2009	تاريخ	٥/١١/٢٠٠٩
We approve the stamp	مصدق على ختم وزارة الخارجية		
signature of Z. Al-Hamad	الوزير الخارجية	توقيع	الوزير
بدون أية مسئولية من قبل الممثلة فيما تقتضيه هذه الوثيقة			
With out any responsibilities from Mission later of what this document contains			
Consul		القنصل	

Sample 2: Document Legalised without Stamps

This is another example to provide evidence that a stamp is not an integrated part of the legalisation process.

Sample 3: Documents Legalised with Stamps

The next example of a document legalised shows the stamps and seal placement which consumes a large proportion of the document. This extract describes what can be assumed to be a deformity of the document's appearance:

سفارة دولة الإمارات العربية المتحدة لندن
Embassy of the United Arab Emirates-London
الشعبة القنصلية - Consular Section

No. 3311 13 MAY 2008 Date
الرقم التاريخ

تصديق على مائة ختم و توقيع غرفة التجارة العربية الايرانية

We certify stamp & signature of
the Arab Irish Chamber of Commerce

القنصلية غير مسؤولة عن المحتويات
Not responsible for the content

Consul

القنصل



UNITED ARAB EMIRATES

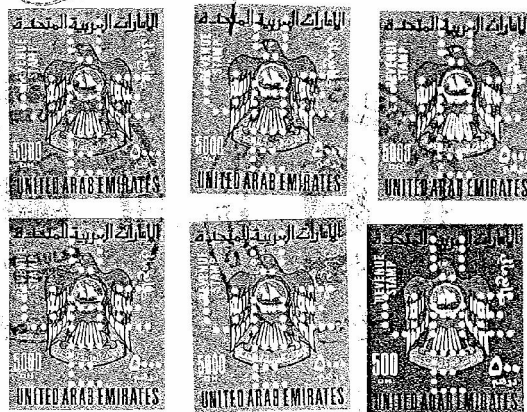
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سفارة دولة الإمارات العربية المتحدة - لندن
Embassy of the United Arab Emirates - London
القسم القنصلي - Consular Section

No. 3312 Date 13 MAY 2008

لصالح على صحة ختم و توقيع مكتب حكومة إيل أوف مان
We certify stamp & signature of
Lieutenant Governor's Office Isle of Man
القنصلية غير مسؤولة عن المحتويات
Not responsible for the contents

القنصل



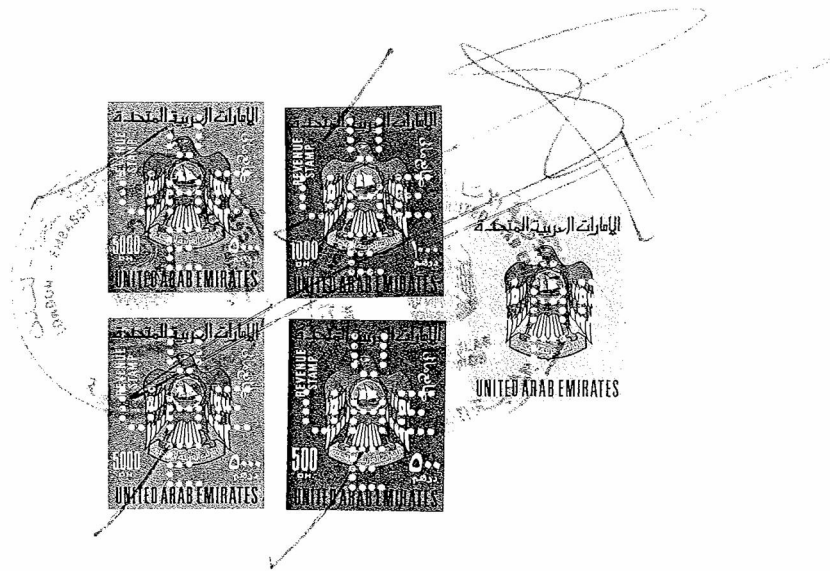
سفارة دولة الامارات العربية المتحدة في لندن
Embassy of the United Arab Emirates-London
القسم القنصلي - Consular Section

No. 3457 Date 16 MAY 2000

امضات على صحة أو تزوير شهادة التجارة العربية البريطانية
We certify stamp signature of
The Arab - British Chamber of Commerce
القنصلية غير مسؤولة عن المحتوى
Not responsible for the content.

Consul

القنصل



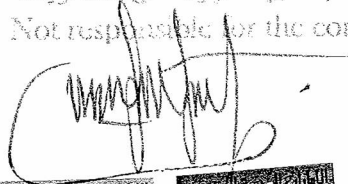
سفارة دولة الإمارات العربية المتحدة لندن
Embassy of the United Arab Emirates-London
القسم القنصلي - Consular Section

No. 3509 Date 19 MAY 2008

أصاوي على صحة و توقيع غرفة التجارة العربية البريطانية
We certify stamp & signature of
The Arab - British Chamber of Commerce
القنصلي غير مسؤول عن المحتويات
Not responsible for the content

Consul

القنصل



Appendix E: Reviews & Comments

Amb-1 Review and Comments

EMBASSY OF THE
UNITED ARAB EMIRATES
LONDON

OFFICE OF THE AMBASSADOR



سـفـارة
الإمارات العربية المتحدة
لـنـدـن

مكتب السفير

Our Ref: HEO/367

13th October, 2010.

Dear Mr. Hasan,

Thank you for the latest presentation of your research into document legalisation.

I have pleasure in commenting on the ideas you have raised about the current and the proposed systems. You have conducted a detailed and critical review about document legalisation historically and the current process wherein you pinpoint a lack of security and the long process involved.

Having been the Director-General of the Dubai Chamber of Commerce & Industry for 23 years, I can clearly understand the just concerns you raise and, hence, the problems that lie ahead of such a process continuing which has been very prolonged and is clearly aging.

The need to change has always been one criteria that the U.A.E. Government has been looking into yet a clear and secured option, such as this research you have conducted, is new and holds all the marks of success. I particularly liked the idea of incorporating the biometric technology instead of the current visual recognition of manual signatures. I believe this will set a critical dialogue in authorising this step. Nevertheless, it is an advantage that the proposed process can be implemented in stages.

The use of technology in this day of age cannot be seen as a luxury but as an essential need especially when considering workflow and managing a vast amount of documents. After considering all the benefits your proposed process gives over the current process, it seems wise to consider a change. Nevertheless, more review by a government committee needs to address the practical terms in logistical relations and implementation levels.

Your proposed process may have overcome and solve the weakness of the current system in many areas some of which are very critical e.g. security and document traceability.

I congratulate you for taking the initiative with your research and its compilation which I see as innovative and detailed.

Thank you for your effort and time in taking this initiative.

Yours sincerely,

Abdulrahman G. Almutaiwee
Ambassador

Otb-1 Review and Comments

EMBASSY OF THE
UNITED ARAB EMIRATES
LONDON



سفارة
الإمارات العربية المتحدة
لندن

27th October 2010

Dear Mr. Hasan,

I read with great interest your research, “Document Legalisation Process.”

In the paper, the current legalisation process has been clearly explained, including the method, its purpose as well as giving us a look at its history as the process took shape over time and arriving at its current form.

There will always be a need to find innovative yet practical ways to facilitate operations in an ever more interdependent world where modern transportation and telecommunication have reduced distances, where no longer do differences in language and culture create barriers. This said, when implementing new practices, in particular the proposed process, certain preconditions need to be in place in order to arrive at the desired objective.

One crucial precondition, is securing the political commitment and leadership at the highest level possible, and having a clear understanding of any implications when undertaking the task of introducing a new methodology.

Another is making certain of building a sound infrastructure where, on one hand, a reliable and robust system would be capable of fending off any attacks – whether virtual or physical that may compromise its security – and on another, securing the funds needed to cover the costs of setting up this proposed process and train the necessary relevant capacity.

In the paper, the comparison made between the current and proposed processes identifies some of the challenges each face and address the positive and negative points each has. It has also revealed fundamental advantages, which the proposed process has over the current, in terms of reliability and efficiency – clearly – one of which lies in reducing the number of steps needed to go through the document legalisation process from six to only two.

Further, the proposed process suggests measures superior to the current process where:

1. there is no reliance on visually verifying documents rather it is done electronically and so minimises human error,
2. the use of a database against which all documents would be checked, is novel as there are none for the current legalisation process,
3. it is recommended to use biometric signatures instead of current manual signatories; hence, minimising human error, and,
4. having a serialised document makes all documents traceable.

EMBASSY OF THE
UNITED ARAB EMIRATES
LONDON



سفارة
الإمارات العربية المتحدة
لندن

The proposed process in this research will challenge traditional methods and conventional thought. Fundamentally, it will encourage a debate and bring together minds and ideas, and hopefully arrive at a genuine and critical assessment of current and new processes.

In my opinion, a new process that is efficient and effective than the current process should be considered and I see that this proposal has the necessary facets to take the legalisation process to the next level.

Thank you for your effort and time in carrying out this initiative.

Yours sincerely,

Mohammed Al-Otaiba
Deputy Head of Mission

Contents



- Part 1
 - Introduction
 - A historical background
- Part 2
 - 2.1 The current Process
 - 2.2 Steps to legalise a document
 - 2.3 The use of stamps
 - 2.4 The Signatures
 - 2.4 Document authentication (Appearance)
- Part 3
 - Methodology
- Part 4
 - 4.1 Findings
 - 4.2 Proposed Process
 - 4.2 Why & How
 - Stamps
 - Signatures
 - 4.3 Traceability, Availability, Security
 - 4.4 Technology, Global Network, Security.
- Part 5
 - UAE as Origin
- Part 6
 - ROI Analysis

Introduction

What is “Document Legalisation”

Documents issued in one country (Origin Country) often have to be legalised before they can be used in another country (Destination Country).

Legalising a document simply means confirming that a signature, seal or stamp appearing on a document is genuine.

Different types of documents (legal papers) such as birth, death and marriages records, deeds of assignments, powers of attorney, commercial invoices etc. require to be legalised by the destination country before this document can be assumed legal

Why UAE

UAE is assumed to be the hub of business in the gulf states

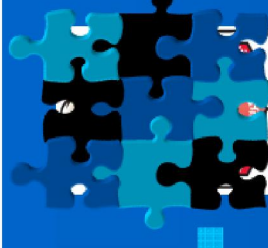


Introduction

Historical background

- History reveals that there was some kind of activity in authenticating documents before the so-called Notary in civil law. In the time of Cicero (106-43BC)^[1], a new system of shorthand was invented and marks/signs called *notae* were used to authenticate documents when a writer took a statement called *notarius* and so, in time, a title *Notarius* was given to the Registrar attached to the courts and/or governors (Ready and Brooke, 2002).

[1] Marcus Tullius Cicero (106-43 BC) was a Roman statesman, lawyer and philosopher. Cicero is widely considered as one of Rome's greatest orators and prose stylists (Rawson, E., 1975).

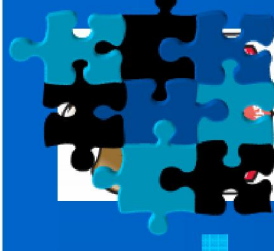


Historical Background



- Around A.D. 803 and by the direction of the Emperor, notaries were appointed to accompany commissioners in their travel around the districts and their job was to authenticate documents. At this time, all abbots and bishops were provided with notaries.
- In the 12th Century, the Pope was assumed to have the right to appoint notaries outside of the Papal States. Cheney (1972,p.4) points out that William Durand^[1] wrote in his Speculum stating “*a notary public appointed by the Emperor or the Pope or by someone to whom they have granted this by special privilege, may perform his office and draw up instruments anywhere, even in France or England or Spain, not only in lands specially subject to the Emperor or the Pope*” .
• *the Consul*
- With the arrival of foreign notaries in England, the Archbishop of Canterbury was then authorised by the Pope to appoint notaries. This was the start of document legalisation moving on to a global dimension.
- ^[1] The secretary to Pope Gregory X.

Historical Background

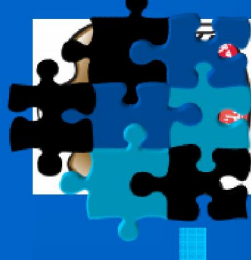


The Present state

- According to the records of modern history, the first formal records of an organisation kept by a group of merchants were established in Marseille, France, Bishop (1918, ch1, p.1) states that *“France has the honor of establishing the first mercantile association under the name of Chamber of Commerce. This occurred early in the year 1400, under a government grant which vested it with extraordinary jurisdiction in deciding commercial questions. The society was several times sup-pressed and regularly restored, and received a definite organization in 1650”*.
- At an international level there were no international regulations to the trade. It was not until the year 1923 when the official regulated certification services was established at the International Convention Relating to the Simplification of Customs Formalities that was held in Geneva^[1] which gave governments the power to delegate the administration of the certification process, please refer to appendix F, the British Ratification deposited, August 29, 1924.

[1] The 1923 Geneva Convention relating to the Simplification of Customs Formalities (Article 11) updated by the Kyoto Convention.

Introduction



- **Summary**

History of this subject at an epistemological level reflects the critical views of researchers in the assumption that social reality is historically composed and that it is replicated by people.

The assumption is therefore apparent in the history of Document legalisation where little has been changed in the process since the time of the Roman Empire.

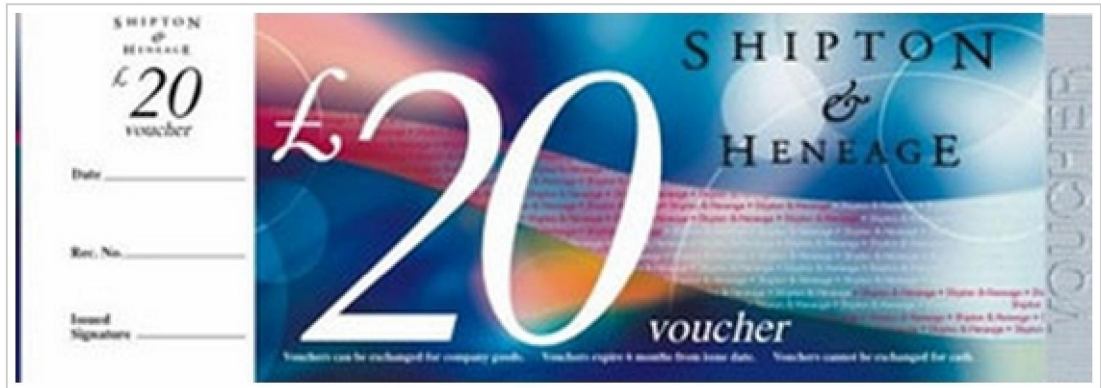
Current Process



In brief, the steps to legalise a document after it has been legalised by the “Origin Country” are:

- **Embassy (Consulate):**
 - To analyse visually that the document is attested and legalised by the Origin Country, This is done by a visual appearance of the document and the agent (Consul) will then add the following, usually on the back of the document:
 - Affixing a stamp (similar to those used in mail post) used for financial purposes only.
 - Embassy seal.
 - Appointed agent signature.
- **Ministry of Foreign Affairs:**
 - The document needs to be verified by the Ministry of Foreign Affairs (MOFA) of the Destination Country.
 - Affixing a stamp (similar to those used in mail post) used for financial purposes only.
 - Ministry seal.
 - Appointed agent signature.
- This can be linked to the history of document legalisation (as stated in Chapter 2) where most of the current method is based on visual appearance Yet, in the midst of the technology revolution and the dramatic change in communications in the last decade and after the internet established itself in every corner of large and small businesses, the thought of utilising this phenomenon was seen as an exciting technological development and highly recommended by technology experts.

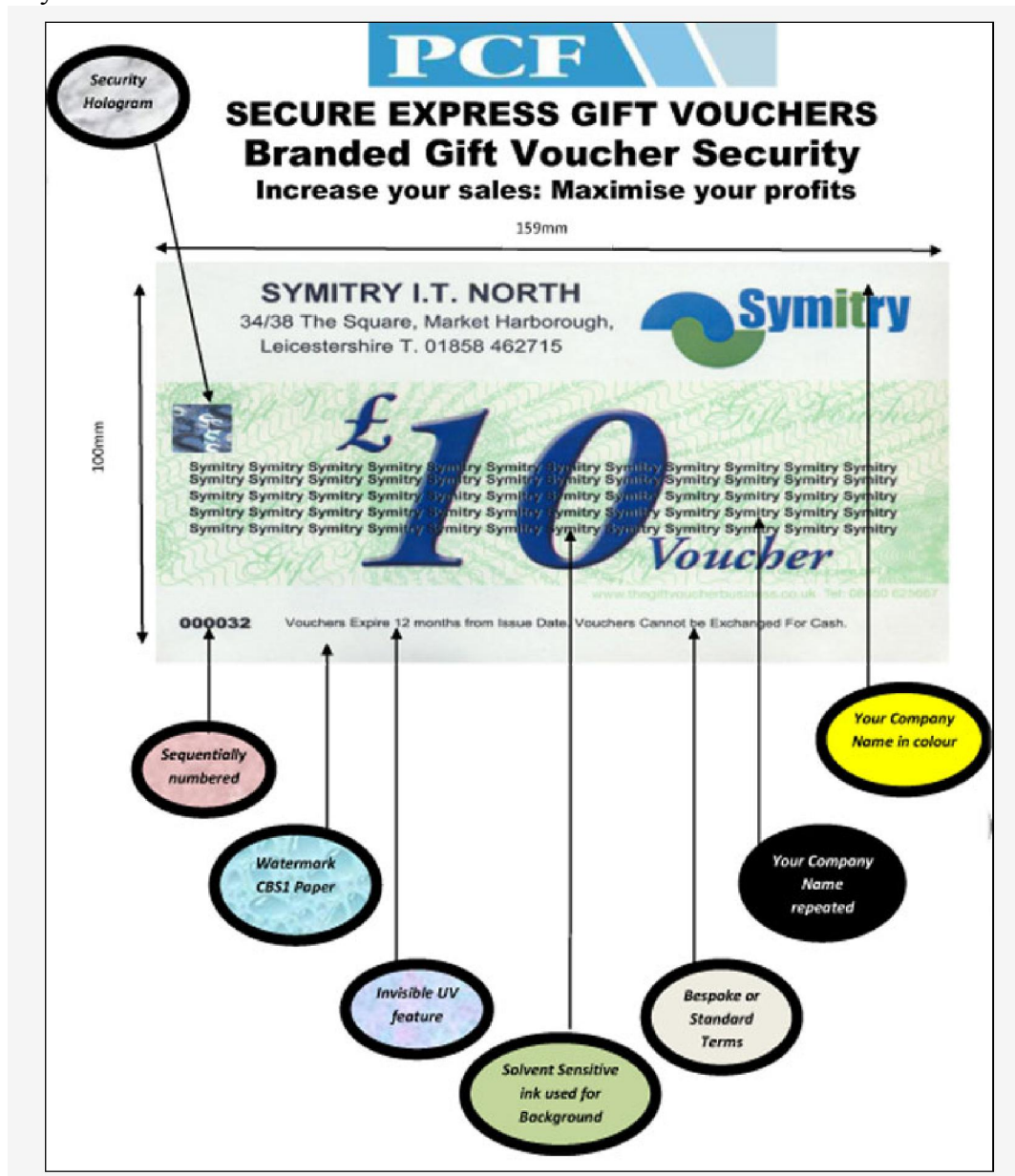
Appendix F: Industry use of security implants in printing technology



122235	<p>Audit Numbered Stock *Security control *Reconciliation</p>
	<p>Watermarked Security Paper *unique/controlled paper *limited supply</p>
	<p>Heat Reactive Spot (Reverse) Changes colour when you rub between the thumb and forefinger for instant voucher validation.</p>
	<p>Holographic Foil Strip *unique/controlled foil *single source</p>
	<p>Hologram overprinted - Visible Numismatic *Protects against hologram misuse</p>
	<p>Micro-numismatic Invisible UV (Reverse) *banknote security graphic *extremely difficult to reproduce</p>

http://www.giftvoucherprinting.co.uk/security_features.asp

Example of security implants print shows the features that can be used in the printing industry:



<http://www.thebarcodebusiness.co.uk/gift-vouchers/popup/gift-voucher-security-features-express.htm>

**Appendix G: International
Convention Relating to the
Simplification of Customs
Formalities**

TREATY SERIES No. 16 (1925) available: <http://www.fco.gov.uk/en/treaties/treaties-landing/records/04000/04021> [Access 10 March 2010]

605



TREATY SERIES No. 16 (1925).

INTERNATIONAL CONVENTION
RELATING TO THE
SIMPLIFICATION OF CUSTOMS
FORMALITIES
AND
PROTOCOL OF SIGNATURE.

Geneva, November 3, 1923.

(British Ratification deposited, August 29, 1924.)

(Came into operation, November 27, 1924.)

*Presented by the Secretary of State for Foreign Affairs to Parliament
by Command of His Majesty.*

LONDON :

PRINTED & PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE.

To be purchased directly from H.M. STATIONERY OFFICE at the following addresses :
Imperial House, Kingsway, London, W.C.2; 28, Abingdon Street, London, S.W.1;
York Street, Manchester; 1, St. Andrew's Crescent, Cardiff;
or 120, George Street, Edinburgh;
or through any Bookseller.

1925

Price 6d. Net.

Cmd. 2347.

609

International Convention relating to the Simplification of Customs Formalities.

Geneva, November 3, 1923.

(British Ratification deposited, August 29, 1924.)

(Came into operation, November 27, 1924.)

GERMANY, Austria, Belgium, Brazil, the British Empire (with the Commonwealth of Australia, the Union of South Africa, New Zealand, India), Bulgaria, Chile, China, Denmark, Egypt, Spain, Finland, France, Greece, Hungary, Italy, Japan, Lithuania, Luxemburg, the Protectorate of the French Republic in Morocco, Norway, Paraguay, the Netherlands, Poland, Portugal, Roumania, the Kingdom of the Serbs, Croats and Slovenes, Siam, Sweden, Switzerland, Czechoslovakia, the Regency of Tunis (French Protectorate) and Uruguay,

Desiring to give effect to the principle of the equitable treatment of commerce laid down in article 23 of the Covenant of the League of Nations;

Convinced that the freeing of international commerce from the burden of unnecessary, excessive or arbitrary customs or other similar formalities would constitute an important step towards the attainment of this aim;

Considering that the best method of achieving their present purpose is by means of an international agreement based on just reciprocity;

Have decided to conclude a convention for this purpose;

The high contracting parties have accordingly appointed as their plenipotentiaries:—

The President of the German Reich:

M. Willy Ernst, Ministerial Counsellor at the Ministry for Finance of the Reich;

The President of the Austrian Republic:

M. E. Pflügl, Resident Minister, Representative of the Austrian Federal Government accredited to the League of Nations;

His Majesty the King of the Belgians:

M. Jules Brunet, Minister Plenipotentiary, President of the "Bureau international pour la publication des tarifs douaniers," and

M. Armand L. J. Janssen, Director-General of Customs;

The President of the United States of Brazil:

M. Julio Augusto Barboza Carneiro, Commercial Attaché to the Brazilian Embassy in London;

- 607
- His Majesty the King of the United Kingdom of Great Britain and Ireland and the British Dominions beyond the Seas, Emperor of India :
Sir Hubert Llewellyn Smith, G.C.B., Economic Adviser to the British Government ;
- For the Commonwealth of Australia :
Mr. C. A. B. Campion, Manager of the Commonwealth Bank of Australia in London ;
- For the Union of South Africa :
Sir Hubert Llewellyn Smith, G.C.B., Economic Adviser to the British Government ;
- For the Dominion of New Zealand :
The Honourable Sir James Allen, K.C.B., High Commissioner for New Zealand in the United Kingdom ;
- For India :
The Right Honourable Lord Hardinge of Penshurst, K.G., G.C.B., G.C.S.I., G.C.M.G., G.C.I.E., G.C.V.O., I.S.O., Privy Counsellor, former Viceroy, former Ambassador ;
- His Majesty the King of the Bulgarians :
M. D. Mikoff, Chargé d'Affaires at Berne ;
- The President of the Republic of Chile :
M. Jorge Buchanan, former Senator, Commercial Adviser to the Chilean Legation in London ;
- The President of the Republic of China :
Mr. J. R. Loutsengtsiang, Envoy Extraordinary and Minister Plenipotentiary to the Swiss Federal Council ;
- His Majesty the King of Denmark :
M. A. Oldenburg, Envoy Extraordinary and Minister Plenipotentiary to the Swiss Federal Council ; Representative of Denmark accredited to the League of Nations ;
- His Majesty the King of Egypt :
Mr. T. C. Macaulay, Director-General of the Egyptian Customs, and
Ahmed Bey Abdel Khalek, Director of the Cairo Customs House ;
- His Majesty the King of Spain :
M. Emilio de Palacios y Fau, Envoy Extraordinary and Minister Plenipotentiary to the Swiss Federal Council ;
- The President of the Finnish Republic :
M. Niilo Mannio, Secretary-General of the Ministry for Social Welfare, and
M. Urho Toivola, Secretary of Legation ;
- The President of the French Republic :
M. Ernest Bolley, Councillor of State, Director-General of Customs in the Ministry of Finance ;
and, so far as the Protectorate of the French Republic in Morocco is concerned :
M. P. P. Serra, Director of the Sherifian Customs ;

and, so far as the Regency of Tunis (French Protectorate) is concerned :

M. Charles Ode, Director of Tunisian Customs ;

His Majesty the King of the Hellenes :

M. V. Colocotronis, Counsellor of Legation, and

M. D. Capsali, First Secretary of Legation in the Ministry for Foreign Affairs ;

His Serene Highness the Governor of Hungary :

M. Felix Parcher de Terjekfalva, Chargé d'Affaires at Berne ;

His Majesty the King of Italy :

Dr. Carlo Pugliesi, Sub-Director-General of Customs ;

His Majesty the Emperor of Japan :

Mr. Y. Sugimura, Assistant-Director of the Imperial League of Nations Office ;

The President of the Lithuanian Republic :

M. Gaëtan Dobkevicius, Counsellor of Legation, and

Dr. Petras Karvelis, Counsellor in the Ministry of Finance, of Commerce and Industry ;

Her Royal Highness the Grand-Duchess of Luxemburg :

M. Ch. Vermaire, Consul of Luxemburg at Geneva ;

His Majesty the King of Norway :

Dr. Fridtjof Nansen, Professor at the University of Christiania ;

The President of the Republic of Paraguay :

Dr. Ramon V. Caballero, Chargé d'Affaires at Paris ;

Her Majesty the Queen of the Netherlands :

M. E. Menten, Chargé d'Affaires at Berne, for the Kingdom in Europe, and

M. W. I. Doude van Troostwijk, Envoy Extraordinary and Minister Plenipotentiary to the Swiss Federal Council for the Netherlands-Indies, Surinam and Curaçao ;

The President of the Polish Republic :

M. Jan Modzelewski, Envoy Extraordinary and Minister Plenipotentiary to the Swiss Federal Council ;

The President of the Portuguese Republic :

M. A. Bartholomeu Ferreira, Envoy Extraordinary and Minister Plenipotentiary of the Portuguese Republic to the Swiss Federal Council ;

His Majesty the King of Roumania :

M. Nicolas Petresco-Comnène, Envoy Extraordinary and Minister Plenipotentiary to the Swiss Federal Council ;

His Majesty the King of the Serbs, Croats and Slovenes :

M. Radmilo Bouyditch, Inspector in the General Customs Administration, and

M. Valdemar Lounatchek, Secretary of the Zagreb Chamber of Commerce ;

His Majesty the King of Siam :

M. Phya Sanpakitch Preecha, Envoy Extraordinary and
Minister Plenipotentiary to His Majesty the King of Italy ;

His Majesty the King of Sweden :

M. K. Hjalmar Branting, Representative of Sweden on the
Council of the League of Nations ;

The Swiss Federal Council :

M. Samuel Häusermann, Inspector-General in charge of the
Third Section in the General Customs Administration at
Berne, and

M. Emile Ferdinand Leute, Director of the Sixth Customs
District at Geneva ;

The President of the Czechoslovak Republic :

M. Jan Dvoracek, Minister Plenipotentiary and Head of the
Economic Department of the Minister for Foreign Affairs,
and

M. Auguste Schönbach, Ministerial Counsellor in the Ministry
of Finance ;

The President of the Republic of Uruguay :

Dr. D. Enrique E. Buero, Envoy Extraordinary, and Minister
Plenipotentiary of the Republic of Uruguay to the Swiss
Federal Council ;

Who, after communicating their full powers, found in good and
due form, have agreed as follows :—

ARTICLE 1.

The contracting States, with a view to applying between them-
selves the principle and the stipulations of article 23 of the Covenant
of the League of Nations with regard to the equitable treatment of
commerce, undertake that their commercial relations shall not be
hindered by excessive, unnecessary or arbitrary customs or other
similar formalities.

The contracting States therefore undertake to revise, by all
appropriate legislative or administrative measures, the provisions
affecting customs or other similar formalities which are prescribed
by their laws, or by rules, regulations or instructions issued by their
administrative authorities, with a view to their simplification and
adaptation, from time to time, to the needs of foreign trade and to
the avoidance of all hindrance to such trade, except that which is
absolutely necessary in order to safeguard the essential interests of
the State.

ARTICLE 2.

The contracting States undertake to observe strictly the principle
of equitable treatment in respect of customs or other similar regula-
tions or procedure, formalities of the grant of licences, methods of
verification or analysis, and all other matters dealt with in the
present convention, and consequently agree to abstain, in these

610

matters, from any unjust discrimination against the commerce of any contracting State.

The above principle shall be invariably applied even in cases in which certain contracting States, in accordance with their legislation or commercial agreements, may reciprocally agree to accord still greater facilities than those resulting from the present convention.

ARTICLE 3.

In view of the grave obstacles to international trade caused by import and export prohibitions and restrictions, the contracting States undertake to adopt and apply, as soon as circumstances permit, all measures calculated to reduce such prohibitions and restrictions to the smallest number; they undertake, in any case, as regards import and export licences, to do everything in their power to ensure—

- (a.) That the conditions to be fulfilled and the formalities to be observed in order to obtain such licences should be brought immediately in the clearest and most definite form to the notice of the public;
- (b.) That the method of issue of the certificates of licences should be as simple and stable as possible;
- (c.) That the examination of applications and the issue of licences to the applicants should be carried out with the least possible delay;
- (d.) That the system of issuing licences should be such as to prevent the traffic in licences. With this object, licences, when issued to individuals, should state the name of the holder and should not be capable of being used by any other person;
- (e.) That, in the event of the fixing of rations, the formalities required by the importing country should not be such as to prevent an equitable allocation of the quantities of goods of which the importation is authorised.

ARTICLE 4.

The contracting States shall publish promptly all regulations relating to customs and similar formalities and all modifications therein, which have not been already published, in such a manner as to enable persons concerned to become acquainted with them and to avoid the prejudice which might result from the application of customs formalities of which they are ignorant.

The contracting States agree that no customs regulations shall be enforced before such regulations have been published, either in the Official Journal of the country concerned or through some other suitable official or private channel of publicity.

This obligation to publish in advance extends to all matters affecting tariffs and import and export prohibitions or restrictions.

In cases, however, of an exceptional nature, when previous publication would be likely to injure the essential interests of the

country, the provisions of the second and third paragraphs of this article will lose their obligatory force. In such cases, however, publication shall, so far as possible, take place simultaneously with the enforcement of the measure in question.

ARTICLE 5.

Every contracting State whose tariff has been modified by successive additions and alterations affecting a considerable number of articles shall publish a complete statement, in an easily accessible form, of all the duties levied as a result of all the measures in force.

For this purpose all duties levied by the customs authorities by reason of importation or exportation shall be methodically stated, whether they are customs duties, supplementary charges, taxes on consumption or circulation, charges for handling goods or similar charges, and in general all charges of any description, it being understood that the above obligation is limited to duties or charges which are levied on imported or exported goods on behalf of the State and by reason of clearing goods through the customs.

The charges to which goods are liable being thus clearly stated, a clear indication shall be given in the case of taxes on consumption and other taxes levied on behalf of the State by reason of clearing goods through the customs, whether foreign goods are subject to a special tax owing to the fact that, as an exceptional measure, goods of the country of importation are not or are only partially liable to such taxes.

The contracting States undertake to take the necessary steps to enable traders to procure official information in regard to customs tariffs, particularly as to the amount of the charges to which any given class of goods is liable.

ARTICLE 6.

In order to enable contracting States and their nationals to become acquainted as quickly as possible with all the measures referred to in articles 4 and 5 which affect their trade, each contracting State undertakes to communicate to the diplomatic representative of each other State, or such other representative residing in its territory as may be designated for the purpose, all publications issued in accordance with the said articles. Such communication will be made in duplicate and so soon as publication is effected. If no such diplomatic or other representative exists, the communication will be made to the State concerned through such channel as it may designate for the purpose.

Further, each contracting State undertakes to forward to the secretariat of the League of Nations, as soon as they appear, ten copies of all publications issued in accordance with articles 4 and 5.

Each contracting State also undertakes to communicate, as soon as they appear, to the "International Office for the publication of Customs Tariffs" at Brussels, which is entrusted by the International Convention of the 5th July, 1890, with the translation and publica-

612

tion of such tariffs, ten copies of all customs tariffs or modifications therein which it may establish.

ARTICLE 7.

The contracting States undertake to take the most appropriate measures by their national legislation and administration, both to prevent the arbitrary or unjust application of their laws and regulations with regard to customs and other similar matters, and to ensure redress by administrative, judicial or arbitral procedure for those who may have been prejudiced by such abuses.

All such measures which are at present in force or which may be taken hereafter shall be published in the manner provided by articles 4 and 5.

ARTICLE 8.

Apart from cases in which their importation may be prohibited, and unless it is indispensable for the solution of the dispute that they should be produced, goods which form the subject of a dispute as to the application of the customs tariff or as to their origin, place of departure or value, must, at the request of the declarant, be at once placed at his disposal without waiting for the solution of the dispute, subject, however, to any measures that may be necessary for safeguarding the interests of the State. It is understood that the refund of the amount deposited in respect of duties or the cancellation of the undertaking given by the declarant shall take place immediately upon the solution of the dispute, which must, in any case, be as speedy as possible.

ARTICLE 9.

In order to indicate the progress which has been made in all matters relating to the simplification of the customs and other similar formalities referred to in the preceding articles, each of the contracting States shall, within twelve months from the coming into force in its own case of the present convention, furnish the Secretary-General of the League of Nations with a summary of all the steps which it has taken to effect such simplification.

Similar summaries shall thereafter be furnished every three years and whenever requested by the Council of the League.

ARTICLE 10.

Samples and specimens which are liable to import duty, and the importation of which is not prohibited, shall, when imported by manufacturers or traders established in any of the contracting States, either in person or through the agency of commercial travellers, be temporarily admitted free of duty to the territory of each of the contracting States, subject to the amount of the import duties being deposited or security being given for payment if necessary.

To obtain this privilege, manufacturers or traders and commercial travellers must comply with the relevant laws, regulations and customs formalities prescribed by the said States; these laws and

regulations may require the parties concerned to be provided with an identity card.

For the purpose of the present article, all objects representative of a specified category of goods shall be considered as samples or specimens, provided, first, that the said articles are such that they can be duly identified on re-exportation, and secondly, that the articles thus imported are not of such quantity or value that, taken as a whole, they no longer constitute samples in the usual sense.

The customs authorities of any of the contracting States shall recognise as sufficient for the future identification of the samples or specimens the marks which have been affixed by the customs authorities of any other contracting State, provided that the said samples or specimens are accompanied by a descriptive list certified by the customs authorities of the latter State. Additional marks may, however, be affixed to the samples or specimens by the customs authorities of the importing country in all cases in which the latter consider this additional guarantee indispensable for ensuring the identification of the samples or specimens on re-exportation. Except in the latter case, customs verification shall be confined to identifying the samples and deciding the total duties and charges to which they may eventually be liable.

The period allowed for re-exportation is fixed at not less than six months, subject to prolongation by the customs administration of the importing country. When the period of grace has expired, duty shall be payable on samples which have not been re-exported.

The refund of duties paid on importation, or the release of the security for payment of these duties, shall be effected without delay at any of the offices situated at the frontier or in the interior of the country which possess the necessary authority, and subject to the deduction of the duties payable on samples or specimens not produced for re-exportation. The contracting States shall publish a list of the offices on which the said authority has been conferred.

Where identity cards are required, they must conform to the specimen annexed to this article, and be delivered by an authority designated for this purpose by the State in which the manufacturers or traders have their business headquarters. Subject to reciprocity, no consular or other visa shall be required on identity cards, unless a State shows that such a requirement is rendered necessary by special or exceptional circumstances. When a visa is required, its cost shall be as low as possible and shall not exceed the cost of the service.

The contracting States shall, as soon as possible, communicate direct to each other, and also to the Secretariat of the League of Nations, a list of the authorities recognised as competent to issue identity cards.

Pending the introduction of the system defined above, facilities at present granted by States shall not be curtailed.

The provisions of the present article, except those referring to identity cards, shall be applicable to samples and specimens which are liable to import duties and the importation of which is not prohibited, when imported by manufacturers, traders or commercial

614

travellers established in any of the contracting States, even if not accompanied by the said manufacturers, traders, or commercial travellers.

[SPECIMEN.]

[NAME OF STATE.]

(Issuing Office.)

IDENTITY CARD FOR COMMERCIAL TRAVELLERS.

Valid for twelve months including the day of issue.

Good for..... No. of identity card

It is hereby certified that the bearer of this card

M., born at

living at No. Street

is the owner of*

at

for the purpose of trade

(or) is a commercial traveller employed by { the firm of

at { the firms of

which { possess*

for the purposes of trade

The bearer of this card intends to solicit orders in the above-mentioned countries and to make purchases for the firm(s) referred to. It is hereby certified that the said firm(s) is (are) authorised to carry out its (their) business and trade at and that it pays (they pay) the taxes, as provided by law, for that purpose.

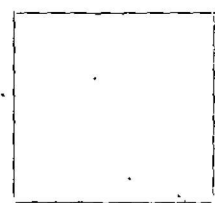
....., the 19.....

Signature of the head of the firm(s)

Description of the bearer.

Age
Height
Hair
Special marks

Signature of the bearer.



* State the articles or nature of the trade.

N.B.—The first entry should only be completed for heads of commercial or manufacturing businesses.

ARTICLE 11.

The contracting States shall reduce as far as possible the number of cases in which certificates of origin are required.

In accordance with this principle, and subject to the understanding that the customs administrations will retain fully the right

of verifying the real origin of goods and consequently also the power to demand, in spite of the production of certificates, any other proof they may deem necessary, the contracting States agree to comply with the following provisions:—

1. The contracting States shall take steps to render as simple and equitable as possible the procedure and formalities connected with the issue and acceptance of certificates of origin, and they shall bring to the notice of the public the cases in which such certificates are required and the conditions on which they are issued.

2. Certificates of origin may be issued not only by the official authorities of the contracting States, but also by any other organisations which possess the necessary authority and offer the necessary guarantees and are previously approved for this purpose by each of the States concerned. Each contracting State shall communicate as soon as possible to the Secretariat of the League of Nations a list of organisations which it has designated for the purpose of delivering certificates of origin. Each State retains the right of withdrawing its approval from any organisation which has been so notified to it, if it is shown that such organisation has issued certificates in an improper manner.

3. In cases where goods are not imported direct from the country of origin, but are forwarded through the territory of a third contracting country, the customs administrations shall accept the certificates of origin drawn up by the approved organisations of the third contracting country, retaining, however, the right to satisfy themselves that such certificates are in order in the same manner as in the case of certificates issued by the country of origin.

4. The customs administrations shall not require the production of a certificate of origin—

- (a.) In cases where the person concerned renounces all claim to the benefit of a régime which depends for application upon the production of such a certificate.
- (b.) When the nature of the goods clearly establishes their origin, and an agreement on this subject has been previously concluded between the States concerned.
- (c.) When the goods are accompanied by a certificate to the effect that they are entitled to a regional appellation, provided that this certificate has been issued by an organisation designated for this purpose and approved by the importing State.

5. If the law of their respective countries permits, and subject to reciprocity, customs administrations shall—

- (a.) Except in cases where abuse is suspected, dispense with proof of origin in regard to imports which are manifestly not of a commercial nature, or which, although of a commercial nature, are of small value.
- (b.) Accept certificates of origin issued in respect of goods which are not exported immediately, provided that such goods are despatched within a period of either one month or

676

two months, according as the exporting country and the country of destination are or are not contiguous; this period may be extended, provided that the reasons given for the delay in completing the transport of the goods appear satisfactory.

6. When, for any sufficient reason, the importer is unable to produce a certificate of origin when he imports his goods, the customs authorities may grant him the period of grace necessary for the production of this document, subject to such conditions as they may judge necessary to guarantee the charges which may eventually be payable. Upon the certificate being subsequently produced, the charges which may have been paid, or the amount paid in excess, shall be refunded at the earliest possible moment.

In applying the above provision, such conditions as may result from the exhaustion of the quantities which may be imported under a rationing system shall be taken into account.

7. Certificates may be in either the language of the importing country or the language of the exporting country, the customs authorities of the importing country retaining the right to demand a translation in case of doubt as to the effect of the document.

8. Certificates of origin shall not in principle require a consular visa, particularly when they originate from the customs administrations. If, in exceptional cases, a consular visa is required, the persons concerned may at their discretion submit their certificates of origin either to the consul of their district or to the consul of a neighbouring district for a visa. The cost of the visa must be as low as possible, and must not exceed the cost of issue, especially in the case of consignments of small value.

9. The provisions of the present article shall apply to all documents used as certificates of origin.

ARTICLE 12.

The documents known as "consular invoices" will not be required, unless their production is necessary either to establish the origin of the goods imported in cases where the origin may affect the conditions under which the goods are admitted, or to ascertain the value of the latter in the case of an *ad valorem* tariff, for the application of which the commercial invoice would not suffice.

The form of consular invoices shall be simplified so as to obviate any intricacies or difficulties and to facilitate the drawing up of these documents by the branch of trade concerned.

The cost of a visa for consular invoices shall be a fixed charge, which should be as low as possible; the number of copies of any single invoice required shall not exceed three.

ARTICLE 13.

Where the régime applicable to any class of imported goods depends on the fulfilment of particular technical conditions as to their constitution, purity, quality, sanitary condition, district of production, or other similar matters, the contracting States will

endeavour to conclude agreements under which certificates, stamps or marks given or affixed in the exporting country to guarantee the satisfaction of the said conditions will be accepted without the goods being subjected to a second analysis or other test in the country of importation, subject to special guarantees to be taken where there is a presumption that the required conditions are not fulfilled. The importing State should be afforded every guarantee as to the authorities appointed to issue the certificates and the nature and standard of the tests applied in the exporting country. The customs administrations of the importing State should also retain the right to make a second analysis whenever there are special reasons for doing so.

To facilitate the general adoption of such agreements, it would be useful that they should indicate—

- (a.) The methods to be uniformly adopted by all laboratories appointed to make analyses or other tests, these methods being open to revision from time to time at the request of one or more of the States parties to such agreements.
- (b.) The nature and standard of the tests to be carried out in each of the States parties to such agreements, due care being taken that the standard of purity required for the various products is fixed in such a way as not to be tantamount to virtual prohibition.

ARTICLE 14.

The contracting States shall consider the most appropriate methods of simplifying and making more uniform and reasonable, whether by means of individual or concerted action, the formalities relating to the rapid passage of goods through the customs, the examination of travellers' luggage, the system of goods in bond and warehousing charges, and the other matters dealt with in the annex to this article.

In giving effect to this article, the contracting States will extend favourable consideration to the recommendations contained in that annex.

ANNEX TO ARTICLE 14.

(a.) *Rapid Passage of Goods through the Customs.*

Organisation and working of the service.

1. In order to avoid congestion at certain frontier customs offices, it is desirable that the practice of clearing goods at inland offices or warehouses should be encouraged whenever domestic regulations, transport conditions and the nature of the goods permit of this being done.

2. It is desirable that, unless abuse is suspected, and subject to the rights of States under their own legislation, the lead or other customs seals affixed by a State to goods which are in transit or on their way to warehouses should be recognised and respected by other States, apart from the right of the latter to affix new customs marks in addition to the lead or other seals.

Passage of goods through the Customs.

3. It is desirable that the States should, as far as is possible, but without prejudice to their right to levy special charges:—

- (a.) Facilitate the clearing of perishable goods outside ordinary office hours and on days other than working days.
- (b.) Authorise, as far as their legislation permits, the lading and unloading of vessels and boats outside the ordinary custom-house working days and office hours.

Facilities granted to persons declaring goods.

4. It is desirable that the consignee should always be free, except in so far as otherwise provided by article 10 of the Berne Convention of the 14th October, 1890, regarding the Carriage of Goods by Rail, which was amended by the Berne Convention of the 19th September, 1906, to declare, in person, goods in a customs office, or to cause this declaration to be made by some person designated by him.

5. It is desirable, wherever it is considered that such a system could usefully be employed, to adopt a printed form, including the customs declaration, to be filled in by the party concerned, the certificate of verification, and, if the country in question regards it as advisable, the receipt for the payment of the import duties.

6. It is desirable that States should refrain, so far as possible, from inflicting severe penalties for trifling infractions of customs procedure or regulations. In particular, if an act of omission or an error has been committed which is obviously devoid of any fraudulent intent and which can easily be put right, in respect of cases in which the production of documents is required for the clearing of goods through the customs, any fine which may be imposed should be as small as possible so as to be as little burdensome as possible and to have no character other than that of a formal penalty, i.e., of a simple warning.

7. Consideration should be given to the possibility of using postal money-orders or cheques, against security of a permanent character, for the payment or guarantee of customs duties.

8. It is desirable that the customs authorities should, as far as possible, be authorised, when the identity of the goods can be established to their satisfaction, to refund on re-exportation of goods the duties paid on their importation, provided that they have remained continuously under the supervision of the customs authorities. It is also desirable that no export duties should be imposed when such goods are re-exported.

9. Suitable measures should be taken to avoid all delay in the passage through the customs of commercial catalogues and other printed matter of the same kind intended for advertisement when they are sent by post or packed with the goods to which they refer.

10. It is desirable, in cases in which certain documents necessary for purposes of customs formalities must bear the visa of a consulate or other authority, that the office which grants the visa should endeavour so far as possible to keep the hours of business which are habitual in the commercial circles of the locality in which such office is situated; it is also desirable that charges for attendances out of office hours, when levied, should be fixed at as reasonable a figure as possible.

(b.) Examination of Baggage.

11. It is desirable that the practice of examining hand baggage in trains consisting entirely of corridor stock, either *en route* or when the train stops at a frontier station, should if possible be generally applied.

12. It is desirable that the practice recommended in paragraph 11 above as regards the examination of travellers' baggage should, as far as possible, be extended to journeys by sea and on rivers. The examination should, as far as practicable, be carried out on board ship, either during the voyage, when the crossing is not long, or on the ship's arrival in port.

13. It is desirable that notices should be posted on the custom-house premises and, as far as possible, in railway carriages and on boats, stating the charges and duties payable on the chief articles which travellers usually carry, and also a list of the articles the importation of which is prohibited.

(c.) *Treatment of Goods in Warehouses and Warehousing Charges.*

14. It is desirable that States in which such institutions do not already exist should establish or approve the establishment of so-called "constructive" and "special" warehouses, which might be used for goods requiring special care on account of their peculiar character.

15. It is desirable that warehouse charges should be drawn up on a reasonable basis so as to be as a rule no more than sufficient to cover general expenses and interest on the capital laid out.

16. It is desirable that all persons having goods in warehouses should be allowed to withdraw damaged goods; the latter should be either destroyed in the presence of the customs officials or returned to the consignor without the payment of any customs duties.

(d.) *Goods shown on the Manifest but not landed.*

17. It is desirable that the payment of import duties should not be required in the case of goods which, although they are shown on the manifest, are not actually introduced into the country, provided that sufficient evidence of the fact is furnished either by the carrier or by the captain within a time-limit fixed by the customs authorities.

(e.) *Co-operation of the Services concerned.*

18. It is desirable to develop the system of international railway stations and to obtain effective co-operation among the various national organisations established therein.

It would also be advisable to establish the closest possible concordance between the functions and office hours of the corresponding offices of two contiguous countries, whether in the case of roads, rivers or railways. The practice of establishing the customs offices of contiguous countries in the same place, and, if feasible, even in the same building, should if possible be made general.

With a view to carrying out the recommendations contained in the present Section (e), it is desirable that an international conference should be convened, in which representatives of all the administrations and organisations concerned should take part.

ARTICLE 15.

Each of the contracting States undertakes, in return for adequate guarantees on the part of the transport agents, and subject to legal penalties in case of fraud or illegal importation, to allow baggage registered from the place of despatch abroad to be forwarded as of right, and without a customs examination at the frontier, to a non-frontier customs office in its territory, if such office is qualified for this purpose. The contracting States shall publish lists of customs offices thus qualified. It is understood that the traveller will have the choice of declaring his baggage at the first office of entry.

ARTICLE 16.

The contracting States, while reserving all their rights in respect of their own system of law regarding temporary importation and exportation, will be guided as far as possible by the principles laid down in the annex to this article as regards the régime to be applied to goods which are imported or exported in order to undergo a manufacturing process, to articles intended for exhibitions of a public character, whether for industrial, commercial, artistic or scientific purposes, to apparatus and articles employed for experiments or demonstrations, to touring vehicles, or furniture vans, to

620

samples, to packing-cases and wrappings, to goods exported subject to an undertaking that they will be returned, and to other goods of a similar kind.

ANNEX TO ARTICLE 16.

1. It is desirable that the provisions of laws and regulations relating to temporary importation and exportation shall be simplified as far as circumstances allow, and shall be made public in the manner provided for in articles 4 and 5 of the present convention.

2. It is desirable that the measures of application should so far as possible form the subject of general regulations, in order that the persons or firms concerned may be acquainted with and able to take advantage of them.

3. It is desirable that the procedure adopted for the identification of goods should be as simple as possible, and that for this purpose :

(a.) The guarantee afforded by the presence on the articles of marks affixed by the customs administrations of other States should be taken into consideration.

(b.) The system of identification by specimens or samples, by drawings or by complete and detailed descriptions should be instituted, especially in cases in which the affixing of marks is impossible or offers disadvantages.

4. It is desirable that the formalities in connection both with declaration and verification should be carried out not only in the frontier offices, but also in any offices situated in the interior of the country concerned which possess the necessary authority.

5. It is desirable that an adequate time-limit should be allowed for the execution of undertakings which involve temporary importation or exportation, and that due consideration should be given to any unforeseen circumstances which may delay their execution, and the time-limit prolonged in case of need.

6. It is desirable that guarantees should be accepted in the form either of properly secured bonds or of payments in cash.

7. It is desirable that the security given should be refunded or released as soon as all the obligations which had been contracted have been fulfilled.

ARTICLE 17.

The present convention does not prejudice exceptional measures of a general or particular character which a contracting State may be obliged to take in the event of an emergency affecting the safety or vital interests of the country, it being understood that the principle of the equitable treatment of commerce must be observed to the utmost possible extent. Nor does it prejudice the measures which contracting States may take to ensure the health of human beings, animals or plants.

ARTICLE 18.

The present convention does not impose upon a contracting State any obligations conflicting with its rights and duties as a member of the League of Nations.

ARTICLE 19.

The coming into force of the present convention will not abrogate the obligations of contracting States in relation to customs regulations under treaties, conventions or agreements concluded by them before the 3rd November, 1923.

621

In consideration of such agreements being kept in force, the contracting States undertake, so soon as circumstances permit, and in any case on the termination of the agreement, to introduce into agreements so kept in force which contravene the provisions of the present convention the modifications required to bring them into harmony with such provisions; it being understood that this obligation is not applicable to the provisions of the treaties which terminated the war of 1914-18, and which are in no wise affected by the present convention.

ARTICLE 20.

In conformity with article 23 (e) of the Covenant of the League of Nations, any contracting State which can establish a good case against the application of any provision of the present convention in some or all of its territory, on the ground of the grave economic situation arising out of the acts of devastation perpetrated on its soil during the war of 1914-18, shall be deemed to be relieved temporarily of the obligations arising from the application of such provision, it being understood that the principle of the equitable treatment of commerce, which is accepted as binding by the contracting States, must be observed to the utmost possible extent.

ARTICLE 21.

It is understood that the present convention must not be interpreted as regulating in any way rights and obligations *inter se* of territories forming part or placed under the protection of the same sovereign State, whether or not these territories are individually contracting States.

ARTICLE 22.

Should a dispute arise between two or more contracting States as to the interpretation or application of the provisions of the present convention, and should such dispute not be settled either directly between the parties or by the employment of any other means of reaching agreement, the parties to the dispute may, before resorting to any arbitral or judicial procedure, submit the dispute, with a view to an amicable settlement, to such technical body as the Council of the League of Nations may appoint for this purpose. This body will give an advisory opinion after hearing the parties and effecting a meeting between them if necessary.

The advisory opinion given by the said body will not be binding upon the parties to the dispute unless it is accepted by all of them, and they are free, either after resort to such procedure or in lieu thereof, to have recourse to any arbitral or judicial procedure which they may select, including reference to the Permanent Court of International Justice as regards any matters which are within the competence of that court under its statute.

If a dispute of the nature referred to in the first paragraph of this article should arise with regard to the interpretation or application of paragraphs 2 or 3 of article 4, or article 7, of the

622

present convention, the parties shall, at the request of any of them, refer the matter to the decision of the Permanent Court of International Justice, whether or not there has previously been recourse to the procedure prescribed in the first paragraph of this article.

The adoption of the procedure before the body referred to above or the opinion given by it will in no case involve the suspension of the measures complained of; the same will apply in the event of proceedings being taken before the Permanent Court of International Justice, unless the court decides otherwise under article 41 of the statute.

ARTICLE 23.

The present convention, of which the French and English texts are both authentic, shall bear this day's date, and shall be open for signature until the 31st October, 1924, by any State represented at the Conference of Geneva, by any member of the League of Nations and by any States to which the Council of the League of Nations shall have communicated a copy of the convention for this purpose.

ARTICLE 24.

The present convention is subject to ratification. The instruments of ratification shall be deposited with the Secretary-General of the League of Nations, who shall notify their receipt to the members of the League which are signatories of the convention and to the other signatory States.

ARTICLE 25.

After the 31st October, 1924, the present convention may be acceded to by any State represented at the conference referred to in article 23 which has not signed the convention, by any member of the League of Nations, or by any State to which the Council of the League of Nations shall have communicated a copy of the convention for this purpose.

Accession shall be effected by an instrument communicated to the Secretary-General of the League of Nations to be deposited in the archives of the secretariat. The Secretary-General shall at once notify such deposit to all the members of the League of Nations signatories of the convention and to the other signatory States.

ARTICLE 26.

The present convention will not come into force until it has been ratified by five Powers. The date of its coming into force shall be the ninetieth day after the receipt by the Secretary-General of the League of Nations of the fifth ratification. Thereafter, the present convention will take effect in the case of each party ninety days after the receipt of its ratification or of the notification of its accession.

In compliance with the provisions of article 18 of the Covenant of the League of Nations, the Secretary-General will register the present convention upon the day of its coming into force.

ARTICLE 27.

A special record shall be kept by the Secretary-General of the League of Nations showing which of the parties have signed, ratified, acceded to or denounced the present convention. This record shall be open to the members of the League at all times; it shall be published as often as possible, in accordance with the directions of the Council.

ARTICLE 28.

The present convention may be denounced by an instrument in writing addressed to the Secretary-General of the League of Nations. The denunciation shall become effective one year after the date of the receipt of the instrument of denunciation by the Secretary-General, and shall operate only in respect of the member of the League of Nations or State which makes it.

The Secretary-General of the League of Nations shall notify the receipt of any such denunciations to all the members of the League of Nations signatories of or adherents to the convention and to the other signatory or adherent States.

ARTICLE 29.

Any State signing or adhering to the present convention may declare, at the moment either of its signature, ratification or accession, that its acceptance of the present convention does not include any or all of its colonies, overseas possessions, protectorates or overseas territories under its sovereignty or authority, and may subsequently adhere, in conformity with the provisions of article 25, on behalf of any such colony, overseas possession, protectorate or territory excluded by such declaration.

Denunciation may also be made separately in respect of any such colony, overseas possession, protectorate or territory, and the provisions of article 28 shall apply to any such denunciation.

ARTICLE 30.

The Council of the League of Nations is requested to consider the desirability of summoning a conference for the purpose of revising the present convention if requested by one-third of the contracting States.

In faith whereof the above-named plenipotentiaries have signed the present convention.

Done at Geneva, the 3rd day of November, 1923, in a single copy, which will remain deposited in the archives of the secretariat of the League of Nations; certified copies will be transmitted to all the States represented at the conference.

- ✓ Germany : WILLY ERNST.
- ✓ Austria : E. PFLÜGL.
- ✓ Belgium : J. BRUNET.
A. JANSSEN.

624

- ✓ Brazil : J. A. BARBOZA CARNEIRO.
- ✓ British Empire : H. LLEWELLYN SMITH.
- ✓ Union of South Africa : H. LLEWELLYN SMITH.
- ✓ Australia : C. A. B. CAMPION.
- ✓ New Zealand : J. ALLEN.

I hereby declare that my signature includes the Mandated Territory of Western Samoa.

- ✓ India : HARDINGE OF PENSHURST.
- ✓ Bulgaria : D. MIKOFF.
- ✓ Chile : JORGE BUCHANAN.
- ✓ China : J. R. LOUTSENGTSIANG.
- ✓ Denmark : A. OLDENBURG.
- ✓ Egypt : T. C. MACAULAY.
A. ABDEL KHALEK.
- Spain : EMILIO DE PALACIOS.
- ✓ Finland : NILO A. MANNIO.
URHO TOIVOLA.
- ✓ France : E. BOLLEY.
- ✓ Greece : V. COLOCOTRONIS.
D. CAPSALI.
- ✓ Hungary : F. DE PARCHER.
- ✓ Italy : CARLO PUGLIESI.
- ✓ Japan : Y. SUGIMURA.
- ✓ Lithuania : DOBKEVICIUS.
DR. P. KARVELIS.
- ✓ Luxemburg : CH. G. VERMAIRE.
- ✓ French Protectorate of Morocco : P. SERRA.
- Norway : FRIDTJOF NANSEN.
- Paraguay : R. V. CABALLERO.

✓ The Netherlands:

With reference to article 29 of the convention, I have the honour to declare that, although the Netherlands Government only accepts the convention in respect of its European territories, it does not definitely refuse its adhesion as regards its overseas possessions. The Netherlands Government wishes, however, to postpone such adhesion, and reserves the right subsequently to adhere in respect of all or any of its overseas possessions. (Translation.)

E. MENTEN.

Netherlands. For the overseas territories : Netherlands Indies, Surinam and Curaçao. (Translation.)

W. DOUDE VAN TROOSTWIJK.

- ✓ Poland : J. MODZELEWSKI.

Portugal : ✓ A. M. BARTHOLOMEU FERREIRA.

Roumania : ✓

On behalf of the Royal Roumanian Government, I make the same reservations as those formulated by the other Governments and inserted in article 6 of the Protocol, and I would add that the Royal Government understands that article 22 of the convention confers the right to have recourse to the procedure provided for in this article for questions of a general nature solely on the High Contracting Parties, private persons being only entitled to appeal to their own judicial authorities in case any dispute arises with the authorities of the Kingdom. (Translation.)

N. P. COMNENE.

Kingdom of the Serbs, Croats and Slovenes :

RADMILO BOUYDITCH.

Dr. VALDEMAR LOUNATCHEK.

Siam : ✓

PHYA SANPAKITCH PREECHA.

Sweden : ✓

HJ. BRANTING.

Switzerland : ✓

HÄUSERMANN.

E. LEUTÉ.

Czechoslovakia : ✓

J. DVORACEK.

D. SCHÖNBACH.

Regency of Tunis (French Protectorate) :

ODE.

Uruguay : ✓

E. E. BUERO.

10 p 125
for P. M. KILL
Members Excluded

626

**Protocol to the International Convention relating to
the Simplification of Customs Formalities.**

At the moment of signing the convention of to-day's date relating to the simplification of customs formalities, the undersigned, duly authorised, have agreed as follows :—

1. It is understood that the obligations of the contracting States under the convention referred to above do not in any way affect those which they have contracted or may in future contract under international treaties or agreements relating to the preservation of the health of human beings, animals or plants (particularly the International Opium Convention), the protection of public morals or international security.

2. As regards the application of article 3, the obligation accepted by Canada binds only the Federal Government and not the Provincial Governments, which, under the Constitution, possess the power of prohibiting or restricting the importation of certain products into their territories.

3. As regards the application of articles 4 and 5, the acceptance of these articles by Brazil and Canada only involves, in the case of these States, the responsibility of the Federal Government to the extent to which the measures relating to tariffs or regulations referred to in those articles are taken by itself, and without its assuming any responsibility as regards such measures taken by the States or Provinces under rights conferred on them by the Constitution of the country.

4. In regard to the application of article 4 and of the second paragraph of article 5, the undertaking entered into by Germany does not entail any obligation on her part to publish certain trifling taxes which she collects or certain special formalities which she applies, but which are not imposed by her but by Federal States or by local authorities.

5. As regards the application of article 11, the contracting States recognise that the rules which they have established constitute the minimum guarantees which all the contracting States may claim, and do not exclude the voluntary extension or adaptation of such rules by bilateral or other agreements voluntarily concluded between the said States.

6. In view of the special circumstances in which they are placed, the Governments of Spain, Finland, Poland and Portugal have stated that they reserve the right of excepting article 10 at the time of ratification and that they will not be bound to apply the said article until after a period of five years from this day.

A similar declaration has been made by the Governments of Spain, Greece and Portugal in respect of paragraph 8 of article 11 of the convention, and by the Governments of Spain and Portugal in respect of paragraph 3 of the same article. The Government of

Poland has made a similar declaration in respect of the application of the whole of the same article, with the exception of paragraphs 1, 2, 4, 5, 7 and 9, which it agrees to apply as from the coming into force in its own case of the said convention.

The other contracting States, while stating their acceptance of the reserves so formulated, declare that they will not be bound, in regard to the States which have made the said reserves, as regards the matters to which they relate, until the provisions in question are applied by the said States.

Any exceptions which may subsequently be formulated by other Governments, at the time of their ratification or accession, with reference to article 10, article 11, or any particular provisions of those articles, shall be accepted, for the period referred to in the first paragraph above, and subject to the conditions laid down in the third paragraph, if the Council of the League of Nations so decides after consulting the technical body mentioned in article 22 of the convention.

The present protocol will have the same force, effect and duration as the convention of to-day's date, of which it is to be considered as an integral part.

In faith whereof the above-named plenipotentiaries have signed the present convention.

Done at Geneva, the 3rd day of November, 1923, in a single copy which will remain deposited in the archives of the secretariat of the League of Nations; certified copies will be transmitted to all the States represented at the conference.

Germany :	WILLY ERNST.
Austria :	E. PFLÜGL.
Belgium :	J. BRUNET. A. JANSSEN.
Brazil :	J. A. BARBOZA CARNEIRO.
British Empire :	H. LLEWELLYN SMITH.
Union of South Africa :	H. LLEWELLYN SMITH.
Australia :	C. A. B. CAMPION.
New Zealand :	J. ALLEN.

I hereby declare that my signature includes the Mandated Territory of Western Samoa.

India :	HARDINGE OF PENSHURST.
Bulgaria :	D. MIKOFF.
Chile :	JORGE BUCHANAN.
China :	J. R. LOUTSENGTSIANG.
Denmark :	A. OLDENBURG.
Egypt :	T. C. MACAULAY. A. ABDEL KHALEK.

Spain :	EMILIO DE PALACIOS.
Finland :	NILO MANNIO. URHO TOIVOLA.
France :	E. BOLLEY.
Greece :	V. COLOCOTRONIS. D. CAPSALI.
Hungary :	F. DE PARCHER.
Italy :	CARLO PUGLIESI.
Japan :	Y. SUGIMURA.
Lithuania :	DOBKEVICIUS. DR. P. KARVELIS.
Luxemburg :	CH. G. VERMAIRE.
French Protectorate of Morocco :	P. SERRA.
Norway :	FRIDTJOF NANSEN.
Paraguay :	R. V. CABALLERO.
The Netherlands :	Subject to the reservation indicated in the convention. (Translation.) E. MENTEN.
	For the overseas territories of the Kingdom : Netherlands Indies, Surinam and Curaçao. (Translation.) W. DOUDE VAN TROOSTWIJK.
Poland :	J. MODZELEWSKI.
Portugal :	A. M. BARTHOLOMEU FERREIRA.
Roumania :	Subject to the reservations made and explanations given when the convention was signed. (Translation.) N. P. COMNENE.
Kingdom of the Serbs, Croats and Slovenes :	RADMILO BOUYDITCH. DR. VALDEMAR LOUNATCHEK.
Siam :	PHYA SANPAKITCH PREECHA.
Sweden :	HJ. BRANTING.
Switzerland :	HÄUSERMANN. E. LEUTE.
Czechoslovakia :	J. DVORACEK. D. SCHÖNBACH.
Regency of Tunis (French Protectorate) :	ODE.
Uruguay :	E. E. BUERO.
