



**Mauritius Research Council**

**INNOVATION FOR TECHNOLOGY**

**ASSESSING THE FACTORS  
INFLUENCING THE USE OF  
E-GOVERNMENT  
FACILITIES IN MAURITIUS**

**Final Report**

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# **Assessment of the factors influencing the use of E-Government facilities in Mauritius**

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## **ABSTRACT**

Research undertaken on behalf of the MRC has recently demonstrated that the majority of E-Government services are underutilized by the Mauritian Population. This research has indicated two organizations – the Mauritian Police Force the Mauritius Revenue Authority – are among the few organizations to run successful E-Government services.

This research, through the use of qualitative research methods, undertook to identify the key success factors of these organizations with the view of advising the improvement of other E-Government services.

The research was able to identify some of the success factors, but replicating those success factors in the short term will, in the opinion of the research team, prove to be very difficult. Accordingly, the research team undertook, by way of a focus group, to devise and propose an alternative approach to improve E-Government services.

*Keywords:* E-Government, e-services, developing country, dissemination of best practice, information technology, qualitative research methods, Mauritius Revenue Authority, Mauritius Police Force

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## **1.0 Introduction**

For the better part of the past twenty five years, IT investment has been a national priority for Mauritius. From the beginning, the government has been at the vanguard of this drive, either directly, or indirectly through para-public initiatives. What began as modest loans to buy home computers and courses on the use of IT has, over the decades, transformed into increasingly significant commitments. Today, government investment in IT is measured in hundred million rupees.

This, however, does compel the question; is the investment worth it? The national impact of IT investment is, given the far reaching and all-encompassing nature of the technology, difficult to evaluate. What is, however, easier to evaluate, is the benefit that the government itself has perceived from IT investment. The initial gains in productivity made in the 1990s speak for themselves; looking at word processing in the civil service specifically, IT has allowed the government to do away with the entire typewriting infrastructure.

The return of investment was there in the past, but the growing scale of IT investment over the past five years makes questioning the return on investment (ROI) question an even more compelling one. The E-Government platform was certainly a step in the direction of trying to draw value from IT investment. One of the rationales behind the platform was that, with growing IT penetration, the government could potentially consider transitioning its services online, opening the way to potentially do away with many of its physical counterparts.

Preliminary research indicates that the E-Government initiative has had mixed results at best. With the exception of a few star performers, like the MRA and the MPF, most of the content put online by the government has been underutilized by the public at large. While most parties agree that there is a pressing need for the government to approach the E-Government question differently, concrete alternatives have so far not been forthcoming.

This paper proposes to address this concern by looking at the star performers and attempting to identify the key success factors that enabled them to achieve success with their online services. While providing a definitive answer is beyond the scope and means of this modest research paper, it will, nonetheless endeavor to at least provide the beginnings of an answer to the E-Government question.

### 1.1. Objectives and Significance of Research

1. Build upon the findings of previous MRC research to determine the key success factors of e-government star performers in Mauritius
2. Provide recommendations for both future research and identify potential avenues for improvement in E-government services.

## 2.0 Literature Review

Information Technology has been widely regarded by both the academic and professional community as a game changer. By providing very cheap and accessible ways to undertake tasks that, for centuries, were almost impossible to organize, IT is now seen as the great equalizer between the developing and developed world<sup>6</sup>. This argument has, however, been part of the popular discussion for the past twenty five years. In practice, most organizations, and, by extension, their home countries have struggled to realize the theoretical benefits of IT<sup>7</sup>.

While IT has revolutionized the way we live through enhanced connectivity, for the most, very few countries have been able to truly capitalize on the opportunities created by the ICT sector. The United States remains one of the primary beneficiaries of the IT boom, with IT giants like Apple, Facebook, Google and Microsoft reaping massive dividends in terms of online software sales, advertising revenue and information sale<sup>8</sup>.

This income, however, is driven by investment in other countries. To take Facebook as an example, most of the revenue generated by the company goes to American investors and owners. The users of Facebook, however, are drawn from the global community<sup>9</sup>. The level of access required to maintain an active Facebook profile is paid for by the national investment of those countries in ICT.

This particular argument is often neglected from the discussion, because in the developed world, ICT investment is either driven by the private sector, or is backed by the financial pool of powerful governments. In the developing world, however, ICT investment is almost exclusively driven by the public sector.<sup>10</sup> Furthermore, because of the limited means, this investment can come at the expense of other projects, including life-saving ones like better access to drinking water.

This makes for a very concerning trend; the governments worldwide have been investing massively in IT for what can, for the most part, be described as the financial benefit of developed countries. When viewed from a return on investment basis, IT

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<sup>6</sup>Niebel, T. (2018), "ICT and economic growth – Comparing developing, emerging and developed countries", *World Development*, vol. 104, pp. 197-211

<sup>7</sup>Janssen, E. and Swinnen, J. (*In press*), "Technology adoption and value chains in developing countries: Evidence from dairy in India", *Food Policy*

<sup>8</sup>Gray, A. (2017), "These the world's 10 biggest Corporate giants", World Economic Forum <retrieved online 01/02/2018>, <https://www.weforum.org/agenda/2017/01/worlds-biggest-corporate-giants/>

<sup>9</sup>Statista, "Leading countries based on share of Facebook users worldwide as of January 2018" <retrieved online 01/03/2018>, <https://www.statista.com/statistics/264838/countries-with-the-most-facebook-users/>

<sup>10</sup>UNCTAD, *World Investment Report 2017* <retrieved online 01/03/2018>, [http://unctad.org/en/PublicationsLibrary/wir2017\\_en.pdf](http://unctad.org/en/PublicationsLibrary/wir2017_en.pdf)

investment in the developing world paints a very concerning picture; Governments are investing limited national resources into technology that is not yielding tangible gains in national capital productivity, a trend that has been felt even in Mauritius<sup>11</sup>.

This is not a new problem; as early as the 1990s, the academic community coined the term “IT paradox” to describe the disconnect between the potential of IT, and its actual practical results. This problem was famously worded by Robert Solow in 1987, “You can see the computer age everywhere but in the productivity statistics.”

However, this issue is one that existed at the edge of academic discussion. It is only recently that the limelight has shifted back to this topic. There are many reasons to explain the IT paradox, but the main reasons usually boil down to the simple fact that, while IT improves ease of use, it does not always translate into increased output and profitability<sup>12</sup>.

To express the productivity paradox in simple terms, it refers to the fact that IT investment does not always yield a proportional productivity improvement. The gap between national investment in IT and productivity has been felt in many countries, and sparked significant debate. Some have even proposed that there is in fact no productivity paradox. They argue instead that the problem is instead the unrealistic productivity expectations of IT tools.<sup>13</sup> An in-depth analysis of this discussion is beyond the scope of this paper, but it suffices to say that this topic has divided both the professional and academic community.

This is why, in part, the international discussion is increasingly shifting away from “Information Technology” to “IT innovation”. This shift reflects growing awareness that IT investment is only justifiable when it translates into a real impact on the bottom line. It also reflects growing awareness that IT does not create value in and of itself, but rather, must be pursued actively if any fiscal gains are to be realized.

Going back to the developing world context, where most of the IT investment burden is borne by the government, it stands to reason that the government should also ensure that it is retrieving direct value from the very same technology it is investing in. Most

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<sup>11</sup>Thorabally, Y. and Krishnan, R. (2016) “Digest of Productivity and Competitiveness Statistics”, *Statistics Mauritius*, <retrieve online 01/03/2018>,  
<http://statsmauritius.govmu.org/English/StatsbySubj/Documents/PRODUCTIVITY%20and%20COMPETITIVENESS/Productivity%20Digest%202016.pdf>

<sup>12</sup>Dreyfuss, E, Gadson, A., Riding, T. and Wang, A. (n.d.), *The IT Productivity Paradox*

<sup>13</sup>Brynjolfsson, E. (1993), “The productivity paradox of information technology: Review and Assessment”, *Communications of the ACM*, 1993.

governments of the world are, of course, aware of this, and have responded by way of “E-Government” platforms.

The hypothetical benefits of this system are manifold, ranging from cost saving to knowledge sharing, but, as stated above, the developing world has struggled to realise these benefits<sup>14</sup>. The use of official government websites remains lukewarm at best, and, in many countries, paper-based systems are still the dominant approach to conducting official matters. This is all the more concerning, because in many of these countries, these systems cohabit with expensive digital systems, creating significant duplication of work.

While developing countries have robust and risk-taking private sectors that will actively seek to create business opportunities out of new technologies, the same cannot be said about developing countries. For the most part, the developing world is still one where the government is the primary driver of national improvement.

There is, as such, a very strong case to be made for the governments of developing countries to actively explore ways and means through which they can generate value from existing IT infrastructure. This will help ensure an immediate return on investment for these countries. While this might not cover the investment cost completely, this should at least serve to mitigate it.

This is not to say that governments have not attempted to use the internet to facilitate the daily exercise of civil service. However, the level of success and extent of IT penetration has varied immensely. On one hand there are governments that have been content to create a digital copy of their paper-based system online, and operate both systems concurrently. At the other end of the spectrum are governments like Singapore, which leverages IT to micromanage urban traffic.

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<sup>14</sup> Choi, H., Jae Park, M., Rho, J. J. and Zo, H. (2016), “Rethinking the assessment of E-Government implementation in developing countries from the perspective of the design–reality gap: Applications in the Indonesian e-procurement system”, *Telecommunications Policy*, Vol. 40, Iss. 7, pp. 644-660



### 3.0 The case of Mauritius

The Development Bank of Mauritius was, for most of the 1990s, one of the primary vehicles through which the Government helped drive micro-investment (household by household basis). This was done through loans for the acquisition of home computers, the prices of which, at the time, were beyond the reach of many households.<sup>15</sup> Besides subsidizing the cost of technology acquisition, the government also made significant direct investments in IT, culminating in the current push for blanketing the island with fiber optic coverage<sup>16</sup>.

Results, especially from a macro-perspective, have been mixed. While Mauritius has earned praise for its IT investment compared to other African countries, this has not necessarily been matched by an increase in capital productivity. To take 2013 as an example, this was a year where Mauritius starred as one of the African leaders in IT investment<sup>17</sup>. However, it was also a year that saw Statistics Mauritius outline a slight regression in productivity<sup>18</sup>.

Even though research on the subject is not forthcoming as of this date, a possible explanation for this situation would be the simple fact that the country is not using better connectivity for anything other than entertainment purposes. Sites like Myjob.mu and priceguru.mu have attempted to leverage the internet for business, but they are still the exceptions, rather than the rule. The government, for its part, has also attempted to use the internet through the [www.govmu.org](http://www.govmu.org) portal, which centralizes a number of government services online. However, recent research indicates that the use of these services remain lukewarm at best.

Two notable exceptions are the online platforms of the Mauritius Revenue Authority (MRA) and the Mauritius Police Force (MPF). The MRA has looked to transition many of its services, including core services like filling of taxes, and others like online bidding. For its part, the Mauritius Police Force, has looked to move one of its more labor intensive services, the driving permit application process, to an online platform.

There is an argument to be made that both organizations offer essential services, and therefore have a “captive market” to draw from. However, this does not align with international experience. For example, many countries have invested in e-filling systems

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<sup>15</sup><http://www.dbm.mu/>

<sup>16</sup>[https://www.indian-ocean-times.com/Maurice-La-fibre-optique-couvrira-l-ensemble-du-reseau-de-Mauritius-Telecom-en-decembre-2018\\_a5619.html](https://www.indian-ocean-times.com/Maurice-La-fibre-optique-couvrira-l-ensemble-du-reseau-de-Mauritius-Telecom-en-decembre-2018_a5619.html)

<sup>17</sup><http://africamoney.info/mauritius-ranked-1st-in-africa-and-in-top-50-globally-on-information-technology/>

<sup>18</sup><http://statsmauritius.govmu.org/English/Publications/Documents/Regular%20Reports/productivity%20and%20competitiveness/productivity13.pdf>

that do not see significant use. The success of the MPF and MRA, therefore, stand out both locally and nationally, and are worth exploring as case studies to try and identify the root cause for their success, as well as try to develop best practice.

## 4.0 Research Methodology

### 4.1 *The quantitative approach*

The most common way people address any issue in modern research is through quantitative approach, of which the most popular method is through surveys. However, this is used as the “go-to” solution to almost any problem, even when it is not the most efficient way to address it. We need to keep in mind the question we hope to answer, and the way the answer will be presented. If the question is of a quantitative nature, like just finding the penetration of IT and e-services in Mauritius, the go-to solution would have to be quantitative methods (mostly through analysis of the use of e-services rather than surveys).

However, the quantitative research underlying this project has already been performed by Lallmohamed et al. (2016) who found that the use of e-services in Mauritius is severely limited and that of the numerous e-services (over a hundred) available to Mauritians, only two are being used in a consistent manner.

These two are the Driving License/Learner application provided by the Mauritius Police Force, and the Tax Returns service provided by the Mauritius Revenue Authority. What this project aims to achieve is a study of the best practices employed by these specific bodies and seek to understand why these specific institutions succeed where so many others fail. As such, we see that quantitative methods used will be inappropriate for this specific scenario.

#### 4.1.1 *Limitations and constraints on research methods*

The reasons for which quantitative methods are not used are as follows:

1. There is a limited sample.

The sample of “good” services that are available is extremely limited. While we can quantitatively study the bad examples of e-services, we wouldn’t be able to glean anything useful from it, instead it would be better to focus on the two that have succeeded. Quantitative analysing these two instances however will not result in any significant conclusion owing to the fact that the sample is only two institutions.

## 2. The nature of the questions

We are assuming that for the two institutions to succeed, the means they employ must be different from what people commonly use. If it was common, there would be much more than just 2 out of over a hundred services that would be successful. As such, if we are to start with the assumption that most companies do not know of the best practices, we will also have to assume that we, the researchers, are not aware of the best practices ourselves, and therefore, a simple questionnaire would not provide the flexibility required from such a question.

## 3. The nature of the answers

Another one of our key factors in determining the research methodology is the consideration that the companies themselves may not be aware of what the determinants of their success are. We wanted a means that could provide us with the flexibility to analyse the way in which their system is integrated as well as dig into the reasoning behind specific implementations of an idea. This required a back and forth interaction between the parties concerned (researcher and institution) that would not be possible through conventional models and means.

## 4. Actionable information

One of the problems with conventional quantitative means is that it may result in information that is not necessarily actionable, but merely a statement of a fact. Knowing the popularity of a website, or government portal will only inform us of the state of the site. It will not be able to provide information on how to improve the site in order to make it more accessible to the population.

The above factors present a strong case for the use of qualitative research methods over quantitative methods, since the answers we seek are of a qualitative nature.

### *4.1.2 Qualitative Research Methods*

There is a broad range of Qualitative Research Methods, but for the sake of concision, this research paper will focus on the two that were ultimately retained, and highlight the reason why they were retained. This section will also explain how the research team approached the question of privacy.

#### (a) Structured interviews

Structured Interviews remain to this one of the most popular approaches to qualitative. The underlying premise is simple; to conduct an interview by way of a list of questions that provides the interviewer with a means to draw out all relevant answers out of what would otherwise be an open discussion.

This tool is often misunderstood as it is often confused with journalistic interviews. While Journalists will often have set lists of questions, this is typically an advisory, rather than a definitive list. By contrast, structured interviews require the researcher to actively steer the discussion towards obtaining certain answers, without influencing the interviewees to the point of distorting their answer.

This is, in part, why many researchers will often avoid the structured interview approach; besides the challenge of framing the right questions, the interviewee also needs to undertake a skilful balancing act between steering the discussion towards the right answer and shaping their answers outright.

Despite these shortcomings, structured interviews remain a potent research tool, as long as it is backed by a well-reasoned framework of supporting questions.

#### (b) Focus Groups

Focus Groups are a middle-ground approach when a research requires access to qualitative information from a large sample size (e.g. the population of a country). The general idea is to take in the views of a handful of individuals, and attempt to determine, within reason, how representative their views are of the whole population.

The quality of the findings of a focus group not only depend on setting the right questions and managing the sessions well (as is the case for structured interviews) but also getting the right sample. For example, when undertaking research on the strategy of a given industry, a group of six industry specialist will generally generate more meaningful research than a group of six floor workers. This makes of Focus Groups one of the more challenging research tools to leverage successfully, especially when trying to extract reliable answers to specific questions.

On the other hand, focus groups will typically excel in a pioneering context. In the business world, it is a great of generating new product ideas, because the structure allows for creative discussion. In the world of academia, focus groups also thrive when undertaking fresh research on a new subject matter. In such a context, the researcher will often have no real sense of the object of their study. Accordingly, Focus Groups constitute a powerful starting point as an avenue to determine core areas of research.

#### (c) Privacy for qualitative methods

The question of privacy is usually a clear cut one when it comes to quantitative research. The golden rule is simply to not disclose the identity of the respondent. In the case of

qualitative research, the same argument cannot always be made comfortably. For approaches like Focus Groups, which still adhere to the sampling paradigm of “using the views of the few to represent the many” the “do not disclose” rule stands, and this is approach that the research team held itself to.

However, the same cannot be said about structured interview approaches. Typically, the legitimacy of the interview approach will come from the very identity of the people being interviewed. To take this to an absurd length, what makes an interview with Sir Alex Fergusson a good representation of the views of Sir Alex Fergusson is the simple fact that we asking Alex Fergusson himself for his views.

On a more practical note, the quality and reliability of structured interviews will usually be driven by the nature of the jobs the participants hold. In this particular case, however, the research team elected not to disclose the names of the participants because of the very visible role these two organizations hold in society. As such, even though the various interviewees were empowered to speak on their respective areas of expertise, the research team elected to hold back the identities of all interview.

The core reason for this is to avoid the views of any one individual to be singled out, and potentially misrepresented by a third party. That being said, the identities of the interviewees will be made available to all directly associated parties (MRC, MPF and MRA) should the need arise.

## *4.2 Research Questions*

1. What the Mauritius Revenue Authority considers as the main reason why people use its emoluments services.
2. What the Mauritius Police Force considers as the main reason why people use its Driving License/Learner online application platform?
3. Why do people not use the other systems?
4. How can people start using the other available systems?

While these questions are gross generalisations and not representative of the specific questions that need to be asked to obtain specific answers, it does give us an idea of who can answer said questions. For question 1, the only institution who can answer on the implementation and ideas behind the emoluments services is the Mauritius Revenue Authority itself.

For question 2, we will have to ask the Mauritius Police Force, or more specifically, people involved in the implementation and running of the Driving License/Learner Application platform for answers.

For questions 3 and 4, we will have to focus on the people who will use, or use government provided e-services for their opinion and recommendations.

#### *4.2.1 Specific Methods employed*

For questions 1 and 2, we needed a flexible, interactive means of communication with the institutions concerned, and more specifically, people involved in the implementation and maintenance of the services provided. “Interview” provides an interactive method of communication with the parties concerned where the interviewer (researcher) will be able to dig deeper into the different facets of the answer and try to find adequate answers.

The interview method is quite elaborate in that it starts with just a few questions in order to get a general picture and then requires input from the interviewer in order to focus on specific parts of the answer provided by the interviewee so as to obtain more information. The interview method is divided into the interviewer (the person who has the questions, but no specifics, and only a general idea of what he wants to know) and the interviewee (the person who has the answers but must be constantly prompted for specific answers).

This method is suitable for answering the first two questions which assume that the interviewees (Mauritius Revenue Authority and Mauritius Police Force) have the specific answers but need to be probed in order to be able to get the best practices and answers the interviewer (researcher) is looking for.

#### *4.2.1.2 Focus groups*

In order to emulate customer behaviour, we need to construct a group consisting of the likely and potential users of e-services. While it is true that we can reach out to a large sample of people via surveys, we need to keep in mind the constraints laid out earlier. The answers we seek are not of a quantitative nature. We do not need to know how many people want a specific feature, we need to know what features would make people more likely to use the service.

Therefore, we need to be able to keep the answers open-ended. This will lead us into a specific issue with surveys: How can open-ended answers be balanced with surveys which require a large number of respondents, and which ultimately reduces the answers to just numbers of positive or negative responses.

In order to satisfy the requirements of the question, we need to be able to create a sample of the likely userbase and allow a free forum where the ideas can be expressed and discussed upon. Focus groups allows for such a discussion to happen, while also providing a sample representative of the userbase. It should be noted that we are not interested in the quantity of the response, but instead on the quality of the response, so we do not need a large sample to draw conclusions from.

#### *4.2.2 Structure of the Interview*

The interview is structured in such a way as to be able to lay out the fundamental differences between online and pre-online procedures and structures. Specifically, we need to address the issues encountered in pre-online procedures and whether they could be scaled to be used in the current environment and identify potential bottlenecks that could limit the performance of the system.

It is also necessary to find out how the institution deals with acceptance issues, training issues and any issues that could have impeded its adoption of e-services. We also seek to study the reasoning behind the implementation of an online solution, as well as the role of customer feedback within the system. We then try to probe our way into ascertaining what the factors behind the success of the system are.

#### *4.2.3 Structure of the Focus Groups*

The first point of the focus group is to be able to classify the sample into groups of people who have used e-services, intend to use e-services in the foreseeable future, and people who have no intention of using e-services. Identifying which services the group has used or intends to use is the next step, and find out in what capacity these services have been used. We then need to proceed to identifying whether the group has ever used these services before they were online, and if they did, how satisfied they were with it.

The main idea behind the focus group, is to question the people into what features of the online services made them use the service in the first place, and also try to understand why they were not using other e-services available to them. We then discuss the features that would make them more likely to use the e-service platforms available to them.



## **5.0 Findings of the Research**

### **5.1 *Mauritius Revenue Authority***

Through our interview with the Mauritius Revenue Authority, we have been able to explore the different ways in which the institution looks at Information Technology. The first thing to note is that Information Technology solutions aren't considered as real solutions. They are instead considered as a digital form of solution. One of the major findings of the interview is that the Mauritius Revenue Authority now has much less tax emoluments to process than a few years back. This results from alternative solutions that the Mauritius Revenue Authority has had access to. These include raising the minimum threshold for income tax, as well as a simplification of the laws.

Therefore, the Mauritius Revenue Authority would have been able to maintain the older paper form system even in current days. So why did they change the methods? One of the reasons cited is to minimize the overhead in terms of data entry, as well as introduce error-checking tools as early as possible (at the level of the client's data entry) to be able to have a relatively error free system. The digitisation of the system is also part of the institution's efforts to combat money laundering.

The older system would also result in a lot of wastage of human resources. Forms had to be mailed to recipients for them to fill in and mail back. With the new system, this is not necessary anymore, instead, the human resource can focus on providing help for the people who are filling their forms.

When questioned whether the acceptance and access to technology was a defining factor in their move to providing e-services, the Mauritius Revenue Authority representatives responded by saying that whether people themselves know how to use the technology is irrelevant. Most people would most likely know someone who has access and knows how to use the technology. This was also one of the reasons why the Mauritius Revenue Authority stopped mailing forms. And as expected, people have found means to file their emoluments, despite not necessarily having the IT knowledge themselves.

So, ultimately, why did the Mauritius Revenue Authority decide to move on to more modern procedures defined by their range of e-services? Innovation. One clear advantage that the Mauritius Revenue Authority has is its ability to constantly innovate and adapt to the circumstances. Should the institution find a flaw within their systems, corrective measures are immediately taken without the need for much red tape. This is a result of their relatively flat structure and the removal of red tape.

One such innovative idea for example, would be the introduction of the lottery system in order to encourage people to file their emoluments through the online system. This idea has promoted the use of the e-service system and made it successful.

According to them, opportunities need to be acted upon fast, and by the time an idea gets through the bureaucratic machine, that opportunity may be lost and it may be too late. The Mauritius Revenue Authority prides itself on constantly being ahead of the curve by predicting future needs, and also building the idea of “innovation” within the core of the company itself through hiring people who constantly aim to improve and provide new ideas and promoting the expression of such ideas. This has become a part of the institution’s culture.

## *5.2 Mauritius Police Force*

The most popular service offered by the Mauritius Police Force, is the Driving License/Learner Application. Through our interview with members of the IT Unit (PC Mataroah) and Traffic Branch (PC Ankamah), we have been able to probe into the workings of the Driving License/Learner Application as well as other services that are not used as often by the Mauritian population. To begin with, let us talk about the service that Mauritians don’t use: This is the Online Payment facility for Learner/Driving License. The most likely reason put forward by the members of the Mauritius Police Force is that Mauritians are averse to online payments or divulging credit card information. This shows that the sensibilities of Mauritians need to be taken into account when planning and designing a solution to any specific problem.

As concerns the implementation of the Driving License/Learner Application, several key ideas and changes were noted. Most notably, there is a significant improvement in the quality of the service before the implementation of the online solution. Before the online application was introduced, there would normally be a time gap of about 3 months between when an applicant would have to make an application at their local Police Station, and when they would get an appointment. With the new system, that time lag has been reduced to just one month. In addition to being faster, the new system also gives the option of choosing your preferred date and time (out of the available options). With the old system, this wouldn’t have been possible as the record is constantly being updated and manually tracking the availability of spots would have been tedious and inefficient. Despite the advantages provided by the system though, there are still people ( < 10% ) who use the old system by applying at the Police Station. It has also been brought to our attention the extent to which access to technology isn’t a defining factor in the acceptance of a given service. Applicants who do not have access to a Personal

Computer have been known to use the Post-Office IT facilities in order to apply for their learner instead of using the manual system.

The system itself is constantly being improved upon in order to add new features, as well as updating it so that it aligns with new laws and regulations (e.g. Permis-a-Points). The police force itself has benefitted from the move to e-services. In the previous system, the Traffic Branch would usually have to divert staff from other jobs in order to deal with the pile of papers. Currently, the Traffic Branch is able to deal with the increasing amount of Applications (over 700 daily) without having to pull resources from other jobs, or departments.

The major concern at the moment relates to the sheer volume of applications; given there are no physical limits on the ability of Mauritians to apply online, the online platform has opened the proverbial floodgates, leaving the system overloaded. This results in an IT infrastructure that is struggling to support the load of the applications. Given rising GDP per capita, the rate of application for new licences is unlikely to slow down either.

### *5.3 Discussion summary from the Focus Group*

The main idea behind the focus group is to create a conversation around a certain topic with a representative sample of the population. We wanted to understand what e-services the sample used, and why they used these services. What we found was that there was a general lack of knowledge about what e-services are provided by the government. The driver license/learner application, and the tax returns are the only e-services that have enough recognition. Upon further discussion, we tried to narrow down the reasons as to why the sample was unaware of the available services. These generally were along the lines of “we haven’t needed it” or “we haven’t heard of it”. Trying to dig deeper, we questioned about how they ended up knowing about the driver license/learner application and the tax returns application, and the consensus was that they learned from other people.

While members of the focus group have previously visited the Government of Mauritius’s e-portal, they didn’t look at the various services that are available. For this generation, navigating a website isn’t the same as using an app on mobile. The structure of the website provides an overload of information to the viewer, who will then simply choose to explore and access only the service he needs at the time. The absence of an app for E-Government is felt. The government should note that there are

now far more smartphones and handheld devices than there are personal computers in the country.

#### *5.4 Observations*

We can classify the responses from the different parties into three broad categories: A long term solution, a short term solution, and a middle ground. Institutional change would constitute a long-term solution. This is an idea best represented by the Mauritius Revenue Authority. We do not expect institutions seeking short-term results to follow the footsteps of the Mauritius Revenue Authority. But if the institution seeks to create an atmosphere where there is constant innovation and adaptation, they should consider a change to the institution culture.

The short term solution, best represented by the app, would be a fast fix to the issue. We do not expect all institutions to churn out their own apps. Instead what we propose is a centralised E-Government app with quick links to most used services, as well as links to other lesser used services in order to increase their visibility. This doesn't include the creation of specialised platforms for the services.

The middle ground would be similar to the Mauritius Police Force's method. There hasn't been significant structural and institutional change within the Mauritius Police Force, however, there has been significant development on the application itself in order to provide a wholesome experience of the available e-services.

## **6.0 Recommendations and future research**

### **6.1 *Long Term***

1. The research team proposes that the Government actively explore ways and means in which it can promote the commercial use of IT.
2. Furthermore, the research team proposes that the structural qualities that drives the MRA's success be explored in depth, and critically evaluate which components of its structure could be replicated in other government organizations.
3. The government should look to make the transition from a website-centric mindset, to one that accounts for the preferred means of internet access of the end-user, namely, smart phones.

### **6.2 *Mid Term***

The government should look to develop an E-Government plan,

1. Rather than have all government bodies undertake their own E-Government approach, extend the budget of star e-governance performers, make them develop best practice, then adapt their software/experience/approach to other ministries/government bodies
2. The MRA is already well-positioned to explore the various e-payment options, and is also uniquely positioned to recoup any investment made into e-payment.
3. The MPF is already committed to enhancing its public outreach, and could accordingly spearhead the way as far e-communication platforms are concerned.
4. It is the opinion of the Research Team that this Masterplan could be implemented over a 2 year time-frame
  - a. The first year would see the allocation of a special budget the MRC and MPF to develop best practice in their respective areas of specialization
  - b. The second year would see the adaptation and deployment of best practice to other government services.

### 6.3 *Short Term*

The MPF and MRA should look to explore the possibilities offered by the omnipresence of smart phones and internet connectivity in Mauritius.

1. The MPF can easily transition its online registration system for driving permits to a smart phone app, which would allow, for example, for the app to notify the users when appointments are due.
2. The MPF should consider using a “notification” app for both delivering official statements, and its traffic watch system.
3. The MRA should extend the visibility of its tax e-filing app, but also look to move other services onto the app-format. The research strongly recommends the development of an e-bidding app, which would further democratize access to those bids, and ensure the items on auction is truly won by the highest bidders.

The MPF should look to invest further into IT infrastructure

1. The system is currently overtaxed with the existing level of demand (backlog+new applications)
2. The upcoming changes in legislation also mean that people who presently hold licenses may end up having their licenses revoked
3. The dynamics of this change have yet to be put through parliament, but it appears very likely that besides applications for permit, the system may have to contend with “re-applications” as well.
4. To relieve both current and future strain on the system, the MPF should, therefore, proactively invest in IT infrastructure

## **7.0 Conclusion**

The country is at a critical junction in its history, and that of the world at large. The business and academic community are adamant; the future will be dominated by economies that promptly and successfully make the transition to IT. For an island state like Mauritius, effecting this transition is all the more pressing because the country has no wealth of natural resources to fall back upon.

As the primary investor in IT, it falls upon the government to not only lead the way financially, but also in terms of best practice. Unlike many countries, however, Mauritius has the benefit of having a handful of trailblazing organizations that are well ahead of the international curve in terms of IT integration. The research team strongly urges the government to further empower these organizations, and leverage their experience to facilitate the IT transition in other government bodies, parastatal or otherwise.

This transition is, in the opinion of the Research Team not just a question of expedience. Despite the number of times our aging academic elites have deplored the fact that “young people don’t read”, and despite all attempts to bring young people back to traditional media, paper based media is and its supporters are increasingly part of the vocal minority.

We are now faced with a growing demographic of people, many of which have already reached voting age, for whom the golden rule is, “If I can’t access it on my phone, it doesn’t exist”. We urge decision makers to take this into consideration, and endeavor to provide the Mauritian youth with what they need in the format they want.

## **Acknowledgements**

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## List of References

1. Brynjolfsson, E. (1993), "The productivity paradox of information technology: Review and Assessment", *Communications of the ACM*, 1993.
2. Choi, H., Jae Park, M., Rho, J. J. and Zo, H. (2016), "Rethinking the assessment of E-Government implementation in developing countries from the perspective of the design–reality gap: Applications in the Indonesian e-procurement system", *Telecommunications Policy*, Vol. 40, Iss. 7, pp. 644-660
3. Dreyfuss, E, Gadson, A., Riding, T. and Wang, A. (n.d.), The IT Productivity Paradox
4. Gray, A. (2017), "These the world's 10 biggest Corporate giants", *World Economic Forum* <retrieved online 01/02/2018>, <https://www.weforum.org/agenda/2017/01/worlds-biggest-corporate-giants/>
5. <http://africamoney.info/mauritius-ranked-1st-in-africa-and-in-top-50-globally-on-information-technology/>
6. <http://statsmauritius.govmu.org/English/Publications/Documents/Regular%20Reports/productivity%20and%20competitiveness/productivity13.pdf>
7. <http://www.dbm.mu/>
8. [https://www.indian-ocean-times.com/Maurice-La-fibre-optique-couvrira-l-ensemble-du-reseau-de-Mauritius-Telecom-en-decembre-2018\\_a5619.html](https://www.indian-ocean-times.com/Maurice-La-fibre-optique-couvrira-l-ensemble-du-reseau-de-Mauritius-Telecom-en-decembre-2018_a5619.html)
9. Janssen, E. and Swinnen, J. (In press), "Technology adoption and value chains in developing countries: Evidence from dairy in India", *Food Policy*
10. Niebel, T. (2018), "ICT and economic growth – Comparing developing, emerging and developed countries", *World Development*, vol. 104, pp. 197-211
11. Statista, "Leading countries based on share of Facebook users worldwide as of January 2018" <retrieved online 01/03/2018>, <https://www.statista.com/statistics/264838/countries-with-the-most-facebook-users/>
12. Thorabally, Y. and Krishnan, R. (2016) "Digest of Productivity and Competitiveness Statistics", *Statistics Mauritius*, <retrieve online 01/03/2018>, <http://statsmauritius.govmu.org/English/StatsbySubj/Documents/PRODUCTIVITY%20and%20COMPETITIVENESS/Productivity%20Digest%202016.pdf>
13. UNCTAD, World Investment Report 2017 <retrieved online 01/03/2018>, [http://unctad.org/en/PublicationsLibrary/wir2017\\_en.pdf](http://unctad.org/en/PublicationsLibrary/wir2017_en.pdf)



## **APPENDIX A**

### **INTERVIEW QUESTIONNAIRE - MRA**

#### **Interviewee info**

Name of Interviewee:

Service Segment:

Department:

Position in Department:

Details of work (individual or department):

[If possible, try to relate the above question to providing online services]

## Interview Questions

**Problem Statement:** Over the course of the recent years, the government has been aiming to modernize its services to fit the internet age. Previous research has shown that out of the numerous services, only the MRA and the MPF can be deemed to have successfully transitioned.

**Aim:** Our aim is to find what the factors behind the success of the MRA and the MPF are, and if it is possible to replicate it for other services.

### 0: Opening Questions establishing current and former system

1. Can you tell us what services the MRA offers online?
2. How does it work generally?
3. How was the process performed before the move to online services?

#### A: Problem Identification

1. Were you part of the MRA when it was still operating on a paper-form submission system?  
[YES] [NO]

[If NO], Identify at what point Interviewee joined, and proceed to relevant section.

2. How involved were you in the process of form submission at the time?

[1] [2] [3] [4] [5]

On a scale of 1 – 5 in order to attempt to quantify said quality, with 1 being “Not Involved” to 5 being “Very Involved”

3. Was there any issue at the time, or within the foreseeable future, with the processing of forms?  
[YES] [NO]

[If NO] identify whether move was initiated by the MRA, or a government policy, i.e. move to Section B.

[If YES] proceed with line of questioning

4. Can you describe the nature of the problem faced by the MRA with the old system? [OPEN]

If required, several pointers may be used, such as: Time constraints, manpower, scalability, financial resources, etc.

This question can also address the question of scope by identifying departments most affected. If not addressed, follow up with next question.

5. Which were the departments most affected by the problem?
6. How severe would you say the problems were?

## B: Problem Solving

1. Was the move to online services requested by the MRA, or following a change in government policy?
2. [IF MRA] Was it as a result of trying to address the problems, or a change in MRA policy, i.e., a modernization plan?  
[This question is not necessary if 3A established the absence of a problem]
3. Were you consulted during the process of moving to internet-based services?  
[YES] [NO]
4. [IF YES] Did you have any opinion on it at the time? [OPEN]
5. Was the process of designing a solution (not actual implementation or programming of solution) internal, outsourced, or a combination thereof?  
[INTERNAL] [OUTSOURCED] [COMBINATION]
6. How involved were you in the design and implementation of the internet-based solution?  
[1] [2] [3] [4] [5]  
If [1] Skip questions 7 - 9
7. What was your role in the designing of the solution? [OPEN]
8. Were there other alternatives discussed other than an internet-based platform, and if yes, what were they? [NO] [YES + OPEN]

This question aims to identify whether there were alternatives and a discussion around the problem without directly asking if there was formal deliberation.

9. [IF YES] Why did you settle with the current solution? [OPEN]
10. What were the key issues that the internet-based solution absolutely had to address i.e. features that couldn't be compromised on?

This question attempts to understand whether key services were specifically targeted or a blanket solution was decided upon.

11. [Any other details?]

## C: Implementation

1. Was there any form of action plan, or timeline set for the move to online services? [YES] [NO]
2. Was the implementation/programming of the solution performed internally or outsourced, or a combination thereof? [INTERNAL] [OUTSOURCED] [COMBINATION]
3. [IF COMBINATION OR OUTSOURCED] Was there any form of Quality Control exerted by the MRA?
4. [IF YES] How much control did the MRA have over the process?
5. Any reason behind why you'd consider [INTERNAL] or [OUTSOURCED]? (possible pointers include resources such as skillset/knowhow/manpower etc)
6. How involved were you in the implementation (programming or control) of the solution? [1] [2] [3] [4] [5]
7. [If not 1] Were there any problem encountered during the process? [YES] [NO]
8. [IF YES] How did you go about resolving the problem?
9. [Unless otherwise addressed in previous question] Were there any issues with the acceptance of the new system by staff? [YES] [NO]
10. [IF YES] How were these resolved?
11. Have you had any recourse to customer feedback during initial trials? [YES] [NO]
12. [IF YES] Did you make any tweaks to the system following customer feedback?
13. How much of the initial key issues would you say that the system has managed to address? [NONE] [SOME] [ALL]
14. [IF SOME] Which factors would you say have yet to be resolved?

#### D: Results

1. Is the current operation of the system [INTERNAL] or [OUTSOURCED]?
2. [IF OUTSOURCED] How much control does the MRA have over the operations?
3. [IF INTERNAL] Have there been any changes to accommodate for the new systems?
4. What is the reception of the staff towards the system? [Identify specific complaints or appreciations of the system]
5. What is the reception of users towards the system? [Identify specific complaints or appreciations of the system]
6. Has there been any noticeable improvement in the service of the MRA from your point of view?
7. Any problems or issues that may have arisen after the move to the online system? (possible pointers about whether there are issues with older users not adapting to the system, or still using the old system)
8. To what factors/design elements would you attribute the success of the system to?

#### E: Recommendations

1. What are the future plans of the MRA as regards technology/informatisation? (possible pointers include mobile app, or other applications that are more accessible)
2. Are there any other MRA services that still need to be informatised, or you want to see informatised?
3. Any other government service that you'd want to see informatised?
4. Is there any advice that you'd want to give other services that want to move on towards e-government?
5. What, according to you, are the limits of e-government?

## **APPENDIX B**

### **INTERVIEW QUESTIONNAIRE - MPF**

#### **Interviewee info**

Name of Interviewee:

Service Segment:

Department:

Position in Department:

Details of work (individual or department):

[If possible, try to relate the above question to providing online services]

## Interview Questions

**Problem Statement:** Over the course of the recent years, the government has been aiming to modernize its services to fit the internet age. Previous research has shown that out of the numerous services, only the MRA and the MPF can be deemed to have successfully transitioned.

**Aim:** Our aim is to find what the factors behind the success of the MRA and the MPF are, and if it is possible to replicate it for other services.

### 0: Opening Questions establishing current and former system

1. Can you tell us what services the MPF offers online?
2. How does it work generally?
3. How was the process performed before the move to online services?
4. Are there people still using the old systems?
5. If yes, around which percentage of the users are using the old systems?



#### A: Problem Identification

1. Were you part of the MPF when it was still operating on a paper-form submission system?  
[YES] [NO]

[If NO], Identify at what point Interviewee joined, and proceed to relevant section.

2. How involved were you in the process of form submission at the time?

[1] [2] [3] [4] [5]

On a scale of 1 – 5 in order to attempt to quantify said quality, with 1 being “Not Involved” to 5 being “Very Involved”

3. Was there any issue at the time, or within the foreseeable future, with the processing of forms?  
[YES] [NO]

[If NO] identify whether move was initiated by the MPF, or a government policy, i.e. move to Section B.

[If YES] proceed with line of questioning

4. Can you describe the nature of the problem faced by the MPF with the old system? [OPEN]

If required, several pointers may be used, such as: Time constraints, manpower, scalability, financial resources, etc.

This question can also address the question of scope by identifying departments most affected. If not addressed, follow up with next question.

5. Which were the departments most affected by the problem?
6. How severe would you say the problems were?

## B: Problem Solving

1. Was the move to online services requested by the MPF, or following a change in government policy?
2. [IF MPF] Was it as a result of trying to address the problems, or a change in MRA policy, i.e., a modernization plan?  
[This question is not necessary if 3A established the absence of a problem]
3. Were you consulted during the process of moving to internet-based services?  
[YES] [NO]
4. [IF YES] Did you have any opinion on it at the time? [OPEN]
5. Was the process of designing a solution (not actual implementation or programming of solution) internal, outsourced, or a combination thereof?  
[INTERNAL] [OUTSOURCED] [COMBINATION]
6. How involved were you in the design and implementation of the internet-based solution?  
[1] [2] [3] [4] [5]  
If [1] Skip questions 7 - 9
7. What was your role in the designing of the solution? [OPEN]
8. Were there other alternatives discussed other than an internet-based platform, and if yes, what were they? [NO] [YES + OPEN]

This question aims to identify whether there were alternatives and a discussion around the problem without directly asking if there was formal deliberation.

9. [IF YES] Why did you settle with the current solution? [OPEN]
10. What were the key issues that the internet-based solution absolutely had to address i.e. features that couldn't be compromised on?

This question attempts to understand whether key services were specifically targeted or a blanket solution was decided upon.

11. [Any other details?]

## C: Implementation

1. Was there any form of action plan, or timeline set for the move to online services? [YES] [NO]
2. Was the implementation/programming of the solution performed internally or outsourced, or a combination thereof? [INTERNAL] [OUTSOURCED] [COMBINATION]
3. [IF COMBINATION OR OUTSOURCED] Was there any form of Quality Control exerted by the MRA?
4. [IF YES] How much control did the MPF have over the process?
5. Any reason behind why you'd consider [INTERNAL] or [OUTSOURCED]? (possible pointers include resources such as skillset/knowhow/manpower etc)
6. How involved were you in the implementation (programming or control) of the solution? [1] [2] [3] [4] [5]
7. [If not 1] Were there any problem encountered during the process? [YES] [NO]
8. [IF YES] How did you go about resolving the problem?
9. [Unless otherwise addressed in previous question] Were there any issues with the acceptance of the new system by staff? [YES] [NO]
10. [IF YES] How were these resolved?
11. Have you had any recourse to customer feedback during initial trials? [YES] [NO]
12. [IF YES] Did you make any tweaks to the system following customer feedback?
13. How much of the initial key issues would you say that the system has managed to address? [NONE] [SOME] [ALL]
14. [IF SOME] Which factors would you say have yet to be resolved?

#### D: Results

1. Is the current operation of the system [INTERNAL] or [OUTSOURCED]?
2. [IF OUTSOURCED] How much control does the MPF have over the operations?
3. [IF INTERNAL] Have there been any changes to accommodate for the new systems?
4. What is the reception of the staff towards the system? [Identify specific complaints or appreciations of the system]
5. What is the reception of users towards the system? [Identify specific complaints or appreciations of the system]
6. Has there been any noticeable improvement in the service of the MPF from your point of view?
7. Any problems or issues that may have arisen after the move to the online system? (possible pointers about whether there are issues with older users not adapting to the system, or still using the old system)
8. To what factors/design elements would you attribute the success of the system to?

#### E: Recommendations

1. What are the future plans of the MPF as regards technology/informatisation? (possible pointers include mobile app, or other applications that are more accessible)
2. Are there any other MPF services that still need to be informatised, or you want to see informatised?
3. Any other government service that you'd want to see informatised?
4. Is there any advice that you'd want to give other services that want to move on towards e-government?
5. What, according to you, are the limits of e-government?

## **APPENDIX C**

### **QUESTIONNAIRE FOR FOCUS GROUP**

(Assessment of the factors influencing the use of E-Government facilities in Mauritius)

1. Have you ever heard of E-Government /e-services?

2. Have you ever used these services?

Which services have you used?

3. Have you ever visited the government of Mauritius's website or E-Government portal?  
If yes, for what purpose?

4. Have you noticed the list of available e-services on it?

5. What do you think should be done to make these services more visible?

6. What is your preferred means of accessing the internet and other internet based services?

7. Where do you get most of your information, and news from?

8. Would you rather have a centralized means of accessing e-services, or separate methods/application for each service?

9. Would you want the government or specific governmental bodies to connect directly with you instead of making use of third parties and intermediaries?

10. What do you think the future of E-Government should be, and what are your opinions on the current state of E-Government ?

## **APPENDIX D**

### **Transcripts of Interviews and Focus Group Summary**

#### **MRA Answers**

##### **0.1 Can you tell us what services the MRA offers online?**

The MRA offers a number of services for a range of different customers: from individuals to enterprises. Services include filing of tax returns, a complaint system, an e-auction system, informing the public about the different acts and regulations as regards taxing, and a dynamic approach to delivering news through quick links and circulars.

##### **0.2 How does it work generally?**

The customer logs in to the MRA website through his TAN number, and accesses the services offered by the MRA. The MRA website itself offers links to the e-filing system, so it's easy enough for him. The customer fills in the form, saves it, and submits it.

##### **0.3 How was the process performed before the move to online services?**

It consists of several steps. These include designing the forms, ordering the set quantity, printing the forms, printing stickers, applying the stickers on the returns, putting the returns in an envelope, and mailing the envelope via post.

(300 000 – 400 000 returns issued at the time)

The filled envelopes can be posted, or deposited at the MRA. After that, people have to open the envelopes, go through a data entry and validation process. Once that is all done, it then becomes similar to the electronic returns system.

A.1 Yes, most of the employees at the MRA were still around at the time

A.2 Most of the work force of the MRA was diverted at the time of returns in order to deal with the workload.

A.3-A.6 Certainly there were issues with the old systems, but they weren't of an unmanageable nature. In fact, thanks to regulations, the number of returns that the MRA has to deal with has considerably reduced thanks to regulations such as changing the minimum threshold, as well as changes to the VAT-system (from monthly returns to quarterly returns).

The MRA still uses the diverted manpower, but instead of using it for manual work, it has instead been trained for customer service, which they provide at the time of e-filings in order to provide adequate support.

A.3 It was time consuming. Move was initiated by the MRA.

A.4 Printing cost money, and the MRA had to divert manpower from other work in order to deal with the manual labour required. It also required a degree of oversight to ensure that the printing was adequate and no other mistakes were made. Data entry and validation would be the other issue.

A.5 Most of the departments were. People had to be temporarily assigned from other departments in order to work the e-filing specific jobs, like opening envelopes and helping with data entry.

A.6 While the problems were big, they weren't unmanageable.

B. The move to online services was an internal decision at the MRA. The MRA does not rely on external services anymore and most of the review is done internally by the staff and the IT department.

The e-filing system is not the only element of the solution, it's the visible part of the solution. What the MRA has achieved relies on a number of different steps taken. Among those, there was significant tax reform in order to simplify the system and make it ready for an online application, and there was the elimination of red tape and restructuring so as to enable the MRA to apply the reforms quickly. With the institutional reform, the MRA acquired an IT department which was responsible for the implementation and maintenance of the project.

Had the MRA not taken the institutional reform path, it would have to deal with an entire process of tender, quotation, and review by CIB, which would result in a simple solution taking more time than necessary.

The current e-filing system was introduced in 2007. At the time, the MRA had already predicted that the older non-IT literate population would slowly move out of the tax roll and the younger, more IT-literate population would fill in the gap.

B.1 Combination of both. The MRA was empowered by the government to be able to take their own decisions. This institutional reform helped the MRA develop the current iteration of the e-filing system.

B.2 It was part of the institutional reform plan which not only had an e-filing system, but also a simplification of the fiscal system as well as an elimination of red-tape.

B.3 – B7

The MRA was the originator.

We need to understand that the system is not just an online system. There's a whole set of policies and laws that were changed in order to support the system in its current iteration. Reducing the idea to just "designing a solution" would be to consider the e-filing system as the only solution. In fact, the e-filing

system has a simple form entry simply because the laws simplified deductions, and thus the forms are more accessible and suitable for online presentation.

B.8 – The e-filing system is part of a package of solution. This was the most sensible solution.

B.9 – It made sense considering the future of the MRA. At the time, the number of IT-literate people were not as much as there are today. However, the MRA assumed that with tax reforms and time, the non-IT literate crowd would move out of the tax roll and more IT literate people would join in. In addition to that, the older non-IT literate people who made more than the threshold would most likely have access to technology.

B.10 – The system had to be simple enough for people to understand without needing much input from the MRA.

C. The MRA had full control over the process thanks to the Institutional reform. The quality control is internal, and relies on customer feedback. The Customer service department receives comments from users and customers, and directs it immediately to the IT department, which then says if it's possible, and works to implement the solution. This is much more manageable than an external service provider as it would have taken way more time to implement a solution, if ever a solution could be found.

C.1 - The original e-filing system was introduced in the 2000s, and the current iteration dates from 2007. There were changes made to the system as laws were changed.

C.2 – Internal

C.4 - The MRA had full control over what they wanted the system to be.

C.5 - The major difference between an external service provider and an internal system is that the external system takes too much time. Interacting with external service providers take too much time and there are a lot of checks and controls set by the government which make it much harder. For an internal system however, there is no added red tape, so solutions can be found fast.

C.6 - There was a member from the IT department present who was involved in the design.

C.7-C.10 – There are always issues with problems, but the institutional reform empowered the MRA to deal with the problems in an efficient and timely manner. This meant that there were far less issues than would have been faced if it were outsourced. The MRA has empowered its different departments to make decisions by reducing the red tape, and the effect was noticeable when problems were quickly dealt with.

The MRA has cultivated a culture of innovation, and expects a specific mindset from its employees. Employees who have had their role rendered obsolete by the new system were trained to perform other



duties. For e.g. Data entry jobs would be mostly obsolete with the system, so the employees were trained for Customer Service. This made the change far more acceptable.

C.11 – C.12 – Customer Feedback is ongoing. There is a feature that allows the customer to give feedback, which the service department then forwards to the IT department. The IT department is constantly making changes to the system.

C.13 - It depends on what we define the key issues as. If it's efficiency, then yes, the MRA is more efficient now.

D.1 - Fully Internal

D.3 – An IT department was created as part of the institutional reform to accommodate for it.

D.4 – It has been easier on the staff. E-filing period was a hectic time for everybody.

D.5 – Reception of users has been positive. There are rare exceptions who want the old system back, but it's overwhelmingly positive.

D.6 – The MRA can now focus on providing more than just an e-filing system. The MRA is able to provide the functions of informing the public of tax changes and laws as well as educate the public.

D.7 – As mentioned earlier, older users are moving out of the tax roll. Even the people who are not IT literate usually have access to a person who is IT literate and willing to fill their tax forms for them.

D.8 – Adaptability. This adaptability is only possible thanks to institutional reform which has made reacting to issues and problems easy. The MRA does not need to rely on other institutions and increase their wait time.

E.1 The MRA did not have immediate plans for technology/informatisation but remain open for suggestions.

E.2 The MRA finds that should they find something necessary, they will be able to implement it without much issue.

E.3 Not much to comment on other government services.

E.4 If they are willing to take the advice, the MRA encourages building an innovative culture.

E.5 E-government is a service that should ultimately serve the population. Its limits are going to be defined by the population itself.

## MPF Answers –

0.1 – The MPF offers a number of different services under the purview of different departments. The Information Room offers services such as the Traffic Watch. The Traffic Unit offers the online application for driving learner / license, and an e-payment facility for these.

0.2 - The customer logs in to the site, and if they don't have a login, it can be created. They can then access the specific service they want, for e.g. the learner/license application. They will get to add their details and choose an available time slot. They will then have to present relevant documentation on their visit to the MPF.

0.3 – Before the move to online services, people had to go to the police station for appointment. At the police station, they would have to wait until the officer is ready to see them (considering that the officer has to look at several different complaints and people, it would probably take time). They would then leave the required documentation with the officer, who would do the necessary checking as well as sending relevant information to the Traffic Branch to see if there were previous driving offences, or issues with the applicant. After the vetting is complete, the traffic branch sets a date and communicates the date to the officer. This could take as much as 3 months.

0.4 – 0.5 – Yes, about 10% or less of the population still use the old system.

A.1 – Yes.

A.2 – The officer from the Traffic Branch was personally involved in the processing of the application.

A.3 – At the time it wasn't considered much an issue. It was hard, but one expected it to be the job. However, with the changes now, it can be seen how much harder the officers had to work to process the same amount of forms.

A.4 – With the old system, there were severe issues with how many forms could be processed in a day. The rate they were receiving applications was higher than the rate at which they could vet and set dates. Thus, the backlog was usually increasing until they would have to get additional people to deal with it.

A.5 – The Traffic Branch was directly concerned.

A.6 – It would be unmanageable with the number of applications received these days.

B.1 – It was a mixture of both. The MPF wanted it, but it couldn't be passed without government approval.

B.2 – A mixture as well. The MPF is currently on the path towards modernizing its services, both through IT and through best practices.

B.3 – No

B.4 - No

B.5 – The MPF had a list of features they wanted.

B.6 – Not very involved

B.10 – The system had to be reliable and perform a list of actions. They were to be able to apply and get an appointment online. The rest of the process is still the same as the previous system.

C.1 No

C.2 Outsourced

C.3 – C.4 There was some measure of Quality Control, but only at the initial stages. Once the program was available, maintenance and incremental updates are done by the IT Unit of the Police Force.

C.5 – The MPF was not originally equipped for development of that scale.

C.6 – Not involved in original programming. Involved in maintaining and updating.

C.7 – C.8 – There have been issues that have been resolved, but these issues are not necessarily limited to the application itself.

C.9 – C.10 – No. Due to the strict discipline within the MPF, officers do not tend to refuse jobs, but instead learn how to do it.

C.11 – It was an on-the job training, so there wasn't a need for external training.

C.12 – There was a suggestion box and system that was in place, but the MPF didn't receive suggestions. Mostly it was just spam.

C.13 – It has addressed the time issue.

C.14 – The online payment system isn't being utilized as the MPF expected.

D.1 – Internal

D.3 – Servers and the IT Unit have been trained to administer and maintain the system

D.4 – D.5 – Positive. Previously, staff would have to be pulled from their original post just to deal with the increasing paperwork, now the staff is much better utilized. It has also resulted in an improvement on the Police Station side as they now have one less issue to deal with.

D.7 – None that have been recorded. The older system still exists, so there are means for people who do not have the IT literacy required.

D.8 – It would be mostly the ease of access and the improvement in the customer service. Where a service once took 3 months, it now takes 1 month.

E.1 – The MPF hopes to fix the e-payment system and enable more people to use the system.

E.2 - It would be hard for the traffic branch to offer recommendations for other branches of the MPF, but they do see the appeal of a unified police force e-service. There are still parts of the application process that have to be done manually, but computerizing it would be hard as it requires personal interaction.

E.3 – Lots of police work relies on other branches of government. It would be good if those branches were also informatised so that their work is optimized.

E.4 – No.

E.5 – No idea what the limits are, but it has to be within the realm of the possible and in a way that it ensures that laws are followed.

## Focus Group

1. The focus group has heard of the term before, but only as a vague concept. The details of what e-government is, isn't clear.
2. The MRA's tax returns, MPF's Driving license, as well as the Registrar of Companies.
3. Yes. Some of the focus group visited the site for news and information. Others for access to e-services.
4. Some have seen and use these e-services. Most only look for what they need and ignore the rest. Services such like the Citizen Support Unit aren't noticed.
5. These services need to be advertised. For the older members of the focus group, a TV Spot explaining what these services are and how to use them are preferable. For younger groups, facebook and other platforms that the youth use.
6. The older group still use the computer, while the younger population prefers using the phones. The older group cites that connecting through phones is slow and unreliable.
7. Usually through newspapers and other people they know. The younger group gets from facebook.
8. Yes. A centralized means of accessing e-services in the form of an app would be preferable to using different means. One example taken in the form of centralizing e-services is its analogue in the physical world. People don't like moving from one building to another building under a different ministry (e.g. in the case of doing the rites for a deceased, a person would have to get a death certificate, go to the municipality for procedures and other procedures with the sanitary, and then back for other procedures), this results in a lot of unnecessary traffic.
9. Yes, that would make it much better for the end user as well. One of the reasons cited is the lack of transparency and accountability in the government sector. This would help solve that issue.
10. E-government should be a means to provide people with services even outside of working hours. Most people have to take official leaves from work just to start something for a government service, and another day to pick it up. These results in a drop of productivity, as well as increased traffic in the country. This much wastage could be avoided through e-services.