



m-Government in Ireland 2008

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Foreword

Public sector organisations and employees are under greater pressure than ever to deliver value and improve efficiencies. This report explores the role that today's mobile communications can play, especially in relation to cost savings, process efficiencies which release staff to more value added tasks, and better access to public service for citizens. It provides examples of how innovative mobile applications are being trialled and implemented across the Irish public sector and abroad.

The study also highlights the unique position of mobile communications to help combat a regional and socio-economic digital divide. While Internet penetration has risen from 37% in 2005 to 57% today and PC usage has risen from 45% to 65%, they pale in comparison to 116% mobile phone penetration rates.

This is our third study into the use of mobile communications in the public sector. Since last year's report O2 has launched mobile broadband. The potential for mobile broadband, or high speed Internet access through a laptop, is another interesting area covered by the study.

It is noteworthy that adoption of mobile communications for cost and productivity benefits does not need to be complex or expensive. For example, the report comments on the huge potential of SMS (texting). The possibilities for different types of reminders to be sent via SMS, from hospital appointments and revenue deadlines to reminders of when to pay bin and water rates, are numerous.

Finally, I would like to sincerely thank those who gave their time and interest to contribute to this study. I would also like to thank iReach for their usual rigorous analysis and research.



Jude Lynch, Sales Director, O2 Ireland.

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Executive Summary

The purpose of this study is to examine m-Government in Ireland to ascertain what progress has been made in recent years as new mobile technologies have evolved. It is impossible to separate e-Government and m-Government as the latter should complement the former, rather than being seen as a stand alone area. In fact through the course of this iReach study, it has become quite clear that if an organisation possesses an innovative, informative e-Government platform then it is more likely that complementary m-Government projects can be rolled out using the e-Government resource as a basis for development. Certainly we have seen specific examples of Irish Government Departments such as the Revenue Online Service (ROS) and the Department of Agriculture that have been commended on their m-Government services.

Since 2005 internet penetration in Ireland per household has risen from 37% to 57% while PC penetration has also risen, from 45% to 65% by the end of 2007. While these figures are to be cautiously applauded, they pale in comparison to the 116% mobile phone penetration rates that currently exist in Ireland (Source: Comreg Irish Communication Market Quarterly Key Data – December 2007).

Another technological development that has emerged over the course of the last 12 months has been the successful uptake of mobile broadband. Mobile broadband can be defined as access to broadband services through technologies such as 3G mobile handsets or data cards and HSDPA (High Speed Downlink Packet Access). The proliferation of this new technology will allow for users to access more advanced m-Government applications. At the time of publication, the latest figures from Comreg show that 128,000 subscribers use mobile broadband services in Ireland. If mobile broadband uptake continues to grow then the uptake of mobile internet services could be a significant boon not only in terms of the levels of internet penetration in Ireland, but it would also allow for much more readily accessible m-Government services.

The main benefits of m-Government are considered in this research study as follows;

- **Cost Savings**
- **Process Efficiencies**
- **Better Access to public services for Citizens**

This study will review and determine what these benefits may mean for public sector bodies.

In terms of operational cost savings, many m-Government projects now lead to improved cost-efficiency and enhanced quality of service to business and the general public.

Internal worker process efficiencies are an obvious benefit to the public sector through adoption of a more mobile internet oriented approach. Government employees stand to gain significantly from the ability to access internal networks from anywhere at anytime and in a secure way.

The main goal of e-Government, and by extension m-Government, is to bring public services closer to businesses and to the citizen. The effective impact of m-projects is the key to the success with the public. They must provide a benefit to the public in terms of information and the services that they can confer.

There has been a shift in e-Government focus over the last number of years away from looking solely at the benefits to external customers and citizens, to a renewed focus on internal efficiencies that can be created through technology investment. This will see a drive towards quick-win, niche e-Government and m-Government projects rather than larger and more complex roll-outs. e-Government projects that are overtly complex are less likely to see universal use. Simplicity is the key to effective roll-out of e-Government and m-Government projects.

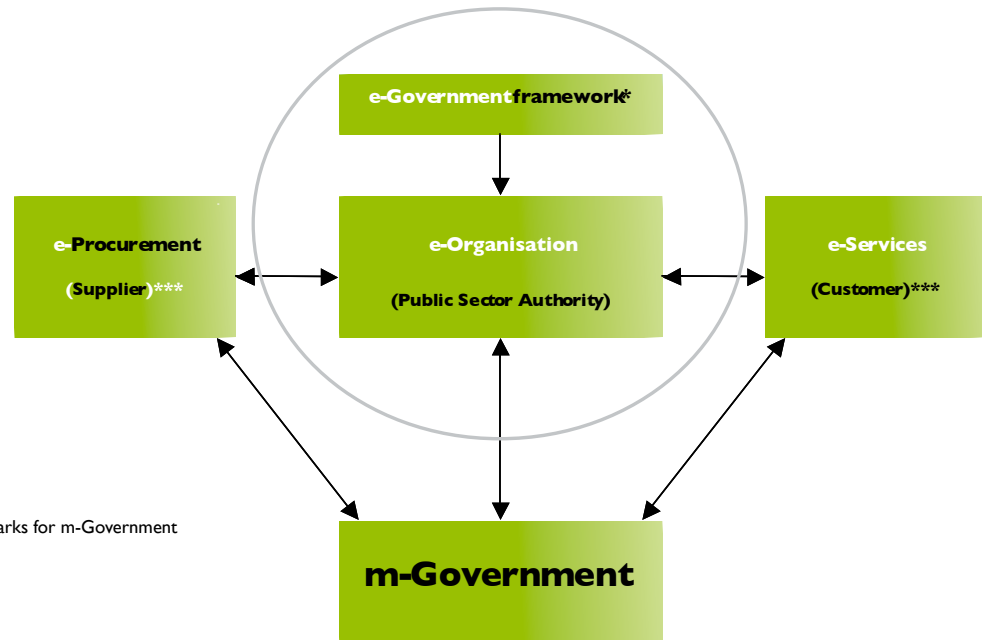
Following on from this point, iReach has conducted research on various overseas projects that highlight some of the benefits even simple SMS technology can confer on Irish Government Departments and Local Authorities. iReach has highlighted four sectors where mobile technology has been effectively rolled out and these will be discussed. The four sectors are;

- **Healthcare**
- **Transport**
- **Agriculture**
- **Tourism**

The final section of the study will look at some potential m-Government projects that could be rolled out in Ireland utilising some of the current e-Government portals that have been developed by Government and Local Authorities. iReach has highlighted three projects that would require basic mobile internet technology, initially, to achieve greater citizen interaction with Irish Government Departments.

From this iReach has framed a set of recommendations as to how e-Government and m-Government can be strengthened in Ireland.

Fig 1 – Framework for delivery of services



* Includes formalised policies and benchmarks for m-Government

**Internal & External Suppliers

*** Internal staff and Citizens

The graph above shows the development of an e-Government system from the initial planning framework. The two components that are found within the central circle are the most important in successfully rolling out e-Government projects. The e-Government framework is a formal plan that would set out the necessary steps to the successful roll-out of e-Government projects within a Department or Local Authority. The framework would also include formal policies relating to m-Government projects that could be developed by the public body in question. There will be a unified agreement between all units within the public body as to the benefits that can be derived from e-Government and m-Government and most importantly what services can be migrated to either, or both, platforms.

From this initial planning stage, the public sector body becomes an e-Organisation; one that not only interacts with clients, suppliers and citizens via electronic means but also allows reciprocal interaction. This two-way stream of electronic communication encompasses both e-Procurement and e-Services projects to internal and external parties (as charted on the graph). The initial framework developed by a public body will highlight the services that are capable of migration to an electronic medium and ultimately to a mobile medium.

Recommendations

This section of the report sets out some of iReach's recommendations for m-Government. These recommendations have been framed based on iReach's examination of the e-Government and m-Government situation that exists in Ireland currently and developments that have been seen overseas.

Recommendations for m-Government Strategy

- **The development of a clear m-Government strategy that benchmarks the positive impact of successful projects is key to continued success. e-Government policy should also include a related m-Government thread within this strategy framework highlighting the successes that have been generated from m-Government roll-outs so far in Ireland.**
- **Align public sector and ICT strategies to develop innovative m-Government projects and portals rather than concentrating solely on web enabling citizen services. Technology in itself is not the key to the successful roll-out of e-Government and m-Government projects. There has to be a unified agreement between all units within a Department as to the benefits that e-Government and m-Government will provide the Department and citizens who may access these applications.**
- **Many successful e-Government projects in Ireland have delivered value internally and externally and thus the roll-out of m-Government projects building upon these platforms or frameworks has been a very successful enhancement to these particular projects.**
- **Focus on quick-win, easy-to-use and valuable citizen oriented services. These are more likely to gain a faster uptake and thus value can be delivered quickly. If such a service is easy to use and delivers a value on a citizen or engages them, an m-Government roll-out will be more successful, while internal efficiencies can be targeted also.**
- **Mobile internet has great potential in terms of 'always on' application access. More advanced applications can be developed utilising the access that this technology affords. Transport and Tourism are excellent examples of sectors that could benefit from location based mobile internet applications. These types of applications afford the public the opportunity to avail of much more interactive functions relating to public services based on location or activity.**
- **Look at overseas models of m-Government. Ireland has much to learn from our European counterparts on delivery of m-Services. Ireland has many software and application development companies capable of delivering the types of m-Government services that can be seen overseas and with proper planning there is no reason why Ireland cannot replicate these successful models.**

Report Methodology

In order to produce this report data was drawn from a number of diverse sources, split between primary (data drawn and collated from direct iReach interaction with interviewees) and secondary (data from third party sources) research techniques. We call this the iReach '360° view'. The research techniques used to gather this data can be divided into two classifications – qualitative and quantitative analysis report comprising document analysis and interviews. Documentation researched included both online and offline government and public service reports from both Irish and European sources, including:

Irish Government Department Reports from:

Department of An Taoiseach (Information Society Policy Unit)

Department of Finance

Department of Agriculture & Food

Department of Education & Science

Department of Enterprise, Trade & Employment (BASIS)

Department of Justice, Equality & Law reform

Department of Health & Children

Department of Environment, Heritage and Local Government

Department of Social & Family Affairs (REACH)

Irish Government bodies:

Revenue Commissioners

Comptroller and Auditor General

Local Government Computer Services Board (LGCSB)

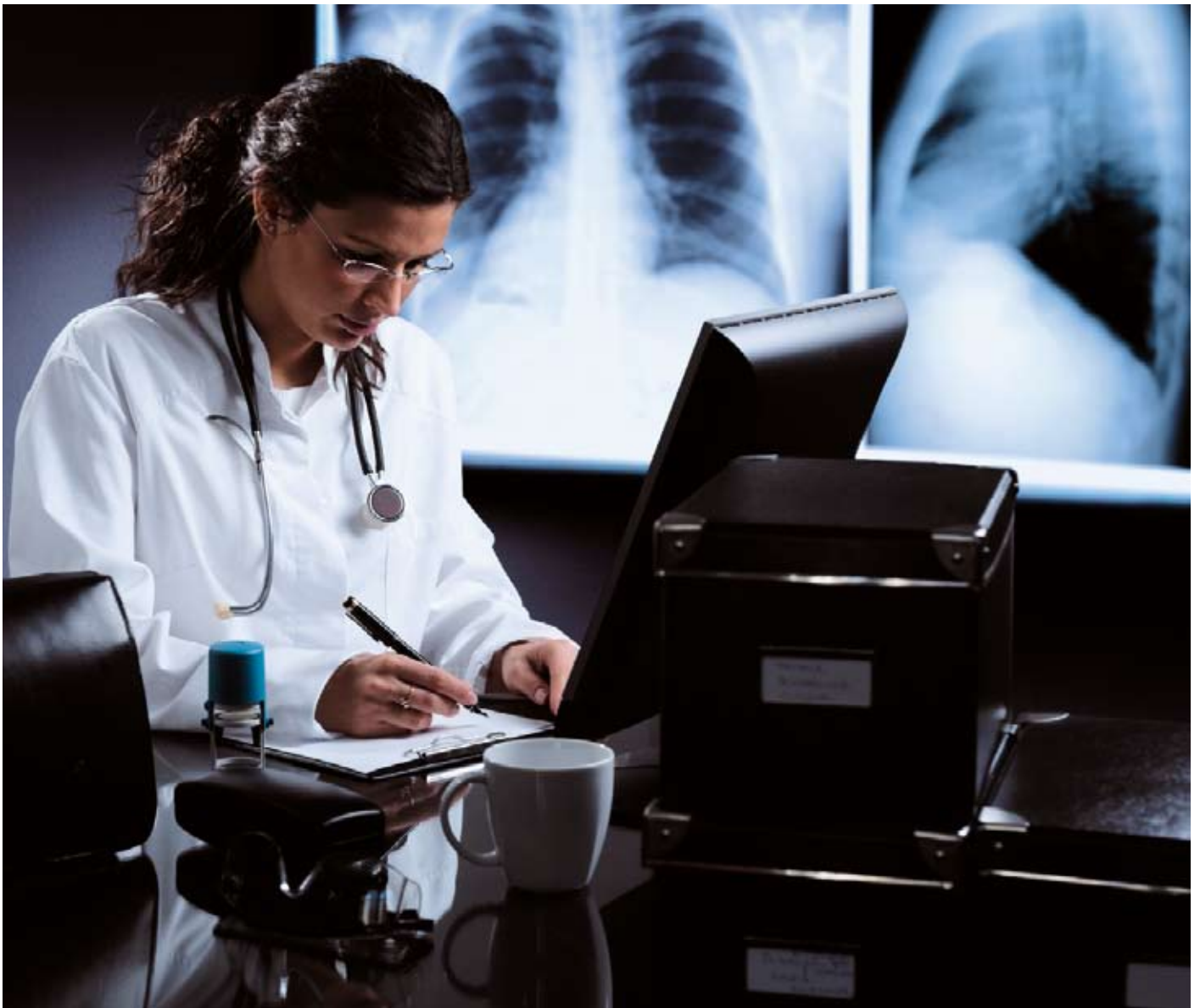
EU Bodies:

EU online – Information Society

International Bodies:

World Bank - e-Development Thematic Group - Conference

In order to deliver independent and relevant research, findings were validated and enriched through interview discussion with a variety of top civil servants in the role of e-Government principal officer and strategy director across a number of Government departments and state bodies, including Revenue Online Service (ROS); Department of Agriculture and Food; Department of An Taoiseach Information Society Policy Unit; Department of Education and Science, as well as agencies such as Teagasc and Dublin Tourism. We would like to thank all of those who agreed to be interviewed for their time and interest in contributing to this study.



Background

What is m-Government?

m-Government focuses on those technologies that are limited to mobile and/or wireless technologies like mobile phones, Smartphones, PDAs (Personal Digital Assistants) and wireless Internet-enabled laptops. m-Government can help make public information and Government services available “anytime, anywhere” to citizens and Government officials. This potential ubiquity of service allows greater interaction between citizens and Government and is becoming much more desirable.

However, m-Government is not a replacement for e-Government, rather it complements it. m-Government is particularly suited to a specific type of information service and should be viewed as a new approach towards delivering more efficient and less costly public services.

Benefits of Mobile Broadband for m-Government

Mobile broadband in Ireland has seen around 128,000 subscriptions to the various service providers generated over the course of the last year.

The benefits of Mobile Internet include

- **Faster access to services on the move**
- **Connectivity almost anywhere**
- **Access to richer mobile applications**

In terms of mobile broadband and whether it would have a positive impact on their mobile projects, representatives from Dublin Tourism believed that mobile internet would have a positive effect as advances in handset technology are just as important in creating the opportunity for organisations to develop and deliver interesting, content rich, interactive content to users.

It is true that the type of information that can be accessed via mobile internet will be much richer in terms of content. It could, for instance, allow for access to interactive maps which would be a boon for tourists or business travellers who need to find information on the layout of a city, or directions to a particular place. In addition to such location based Internet services, GPS enabled handsets would also enable access to more interactive features such as city maps and real time public transport timetables.

For business users and public sector staff, there are additional benefits. Remote access to office desktops is a definite bonus for those who need to be away from the office for long periods of time. It will allow for quick and easy access to internal resources from anywhere and this will lead to significant time and cost savings in terms of employee efficiency.

There are also some excellent potential benefits in terms of the adoption of new technologies that would require faster, easier and immediate access to Internet services. The plan exists to roll-out location based services for monitoring the whereabouts of buses by internal staff within Dublin Bus and Bus Eireann but it would also allow for access to a 'live feed' for citizens, allowing them to find out where a bus is and an estimated time of arrival of public transport.

This type of project would be an excellent way of exploiting the speed, reliability and ubiquity of mobile internet services.

Tim Willoughby of the LGCSB believes that the roll-out of location based technologies can provide a real benefit to the Public Service and conversely to the public by allowing access to advanced features such as mapping and live information feeds for those who have mobile internet enabled handsets or devices.

Key Takeaways

- Mobile broadband has the potential to deliver much richer content on the move anywhere and at high speeds making it a very attractive proposition for accessing m-Government content, particularly for workers who are out of the office a lot. It is desirable in this day where workers are on the move that they can have access to resources anytime, anywhere.
- Connectivity anywhere is a key driver to the success of mobile broadband as it delivers on the ubiquitous access available through mobile technology.

- Location based applications would be ideal to migrate across to an m-Government platform – the type of functionality that these could generate to various Departments (Transport, Tourism and Local Authorities). Mobile internet, with its quick, ‘anytime anywhere’ access would allow for a greatly improved use of such applications. With mobile internet and GPS enabled handsets becoming more prevalent, the use of location based applications will become more popular amongst public sector entities and the public itself.

Drivers for m-Government

The objective of this section is to identify the main drivers to the development and adoption of m-Government in Ireland. In the last study published in 2007, iReach had identified a number of market drivers that were influencing the adoption of m-Government services in Ireland. Through our investigation this time we note that many of these drivers remain the same.

So have perceptions within the public service changed in terms of the key drivers for m-Government? The answer to this is no, they have not. The most likely reasons for the adoption of an m-Government service will encompass one (or more) of these three key concerns.

- **Cost Savings**
- **Process Efficiencies**
- **Better Access to public services for Citizens**

iReach has analysed these three concerns and looked at how they have encouraged the roll-out of m-Government projects in Ireland since the last study was published.

Cost Savings

One of the most frequently touted benefits of m-Government are the operational cost savings that it can afford to Government agencies. Migrating Government payments and receipts away from paper-based processes, in partnership with the banking sector, would lead to improved cost-efficiency and enhanced quality of service to business and the general public.

There are two examples of such eGovernment projects available at the Local Government Computer Services Board (LGCSB). Firstly there is the Online Travel & Subsistence system that has been in operation since 2006. This allows for the compilation, submission, approval and accounting of expense claims online and cuts out the paper process of submitting claims which ultimately saves time, money and effort for internal employees. The ease of use of the system and the ability to build claims over time also adds to the value of the system as it allows employees flexibility in terms of when they submit claims. Certainly with the advent of Mobile Internet an internal online expenses system migrated to a mobile platform would be an excellent facility for remote working.

The LGCSB have also been instrumental in the development of an **e-Payments Facility that allows** customers to pay for refuse charges, traffic fines, golf fees at public courses, housing rents, water charges, housing loans, compostors, landfill fees etc. The facility has been used by Dun Laoghaire-Rathdown County Council who have transacted over €22m in receipts since February 2004. Other Government agencies have also utilised this facility and the Passport Office are utilising the system to process Passport payments; an excellent example of a more 'ubiquitous' and robust e-payment facility that had been recommended in the previous study on this topic.

In an interview with Tim Willoughby of the LGCSB, iReach learned that 700,000 transactions totalling €22 million had been made utilising this e-Payments facility since its inception.

The development of m-Payment facilities from these e-Government applications would be the logical next step, certainly for the payment by customers of various county council charges. The development of an SMS initiated payment model would be the final step in utilising the ubiquity of mobile phones for basic, functional tasks such as paying bin charges for example.

According to the LGCSB this mobile service is the next project on the cards in terms of progressing the accessibility of county council payments to a wider audience. It will however be limited initially to certain types of payments that people feel comfortable making via a mobile handset, such as bin charges.

With certain sectors of society, such as farmers for instance, electronic payments are not seen as being particularly desirable. The recent plan by the Department of Agriculture to migrate farm payments from cheque payments to an electronic format has been criticised by the IFA on the basis that farmers feel more comfortable with cheque payments. Therefore when selecting e-Payment and m-Payment applications, it will be necessary to gauge the target audiences' views on a proposed project. This is particularly so if it is a niche group of people that a Department or Local Authority is dealing with.

Process Efficiencies

Internal worker process efficiencies are an obvious benefit to public sector organisations' adoption of a more mobile oriented approach. Government employees stand to gain significantly from the ability to access networks when they are off site and thus be constantly in contact with their office or teams.

In an interview with senior management at the Department of Education and Science, iReach learned that the availability of remote access by senior management to internal networks provides the flexibility necessary to meet the demands of their roles irrespective of their location/while on the move.

The key to the success of this is the 'always on' functionality that mobile technology enables. With a small device such as a Smartphone or PDA it is possible to access email and work applications with ease and thus save time and costs in terms of working hours lost as a result of being out of the office.

The roll-out of mobile enabled applications across sections of the health sector has also increased internal efficiencies and has played a significant role in the development of a more patient-centric healthcare system.

iReach has seen that Bedside Hospital Information Systems (Bedside HIS) are slowly beginning to be rolled out as the benefits of these are becoming more evident.

Utilising a mobile internet enabled device, clinicians can now gain access to information at the point-of-care for more efficient decision making. It is easy to see that in terms of making bedside decisions, the ability to call up the patient history, allergies and case progress is invaluable to a clinician. It streamlines the decision making process of how to treat a malady. Furthermore the ability to access a large database containing possible illness symptoms makes the technology a very useful training tool for student doctors.

There is less administrative work for doctors in terms of paperwork and seamless changeover between doctor's shifts. This last point is important as doctors coming off shifts need to document the progress their patients have made and any actions that have or need to be taken on a chart by chart basis. This can take up valuable time. With Bedside HIS in place and armed with a portable or mobile device, clinicians can input and extract data on a real time basis. There are no hold-ups in terms of clerical work to be done and the focus can be on treating patients.

Reduction of duty doctor workload particularly in terms of compliance with the recent European Working Time Directives is another positive benefit that mobile applications can furnish to clinicians. The use of this technology allows for a digital tracking of the working hours of doctors on the wards. In essence it is a digital audit trail allowing an organisation to capture data that allows them to fulfil legal requirements.

Better Access to public services for citizens

iReach believes that SMS reminders are an invaluable way of interacting with the public and could be extremely useful in terms of eliminating the need for citizens to query appointments. The possibilities for different types of reminders to be sent, be they hospital appointments or revenue deadlines, to something as simple as reminders of when to pay bin and water rates, are numerous. It is through this use of mobile internet technology that greater efficiencies can be created.

The main goal of eGovernment is, ultimately, to bring Government services closer to businesses and to the citizen. Since most businesses in Ireland have access to technology in terms of PC and Internet connections, it is the question of the digital divide amongst citizens that can be addressed by mobile technologies. With PC penetration levels currently standing at 65%, Internet penetration at 57%, and mobile phone penetration at 116%, it is easy to see that mobile technologies are more likely to impact people directly.

The effective impact of m-projects is the key to their success with the public. They must provide a benefit to the public in terms of information and the service they can confer.

A good example of this would be seen in the SMS project that has been rolled out by the Marine Institute called Dial-a-Buoy. This SMS text service gives weather forecasts, shipping bulletins, gale and swell warnings, as well as public information and research news, by SMS text message directly to a mobile phone. This service does so by connecting to the Marine Institute's network of five floating weather stations around the Irish Coast. The benefits of this service have been felt by members of the public wishing to sail or surf right through to commercial fishermen. Subscription to the service is also relatively cheap meaning that it is an attractive service for those involved in water borne activities.

The approach taken by organisations such as the Marine Institute and Teagasc is a good model to follow. If information pertinent to the public is accessible to individuals via SMS services then it is likely that the uptake will be quite high as long as the pricing is also reasonable.

The next steps in e-Government

While there are obvious drivers to the adoption of m-Government technologies and we have highlighted some successful projects, we have highlighted the three main next steps to the roll-out of m-Government projects and many of these are related to building upon existing e-Government frameworks in Ireland.

Formal Government framework on e-Government

As has been highlighted in the recent report released by the Comptroller and Auditor General there has been, since the beginning of 2006, a lack of a formal e-Government framework.

The Department of the Taoiseach is currently involved in the formulation of a new e-Government framework with other departments and agencies. Two action plans that preceded this future framework, the Action Plan 1999-2001 and New Connections 2002-2005 had set out the steps necessary to drive successful information exchange between the Government and State Agencies and the Public. This included the development of interactive and integrated services, something that is still very much in the minds of those helping to formulate the new e-Government framework.

While any new strategy should address e-Government, it should also contain some formal policy or recommendations in terms of m-Government services, utilising examples such as the Revenue Online and Department of Agriculture projects as relevant benchmarks of what can be achieved through an m-Government project. Highlighting the key efficiencies that have been created within these two organisations, as an example, would allow for a much clearer picture of just how beneficial e-Government and m-Government can be for Departments and Local Authorities.

In an interview with Colm Butler of the Department of the Taoiseach, iReach learned that thinking on the approach to technology in Government is now more focused on realising the benefits of using technology in terms of how it can improve performance in the design or delivery of services or in the internal workings of the public service where there is also a desire to improve efficiencies. Colm Butler hopes that this shift in thinking will lead to a new approach in terms of the support and governance framework to be put in place to make it happen.

Roll-out of e-Government projects

The roll-out of e-Government projects across Ireland has not been as successful as had been initially hoped. While enthusiasm was initially high for the roll-out of e-Government projects, by mid-2006, only 53% of e-Government projects had been rolled out completely.

Generally speaking, for an m-Government project to be rolled out successfully there needs to be a commensurate amount of investment and strategic planning in terms of an e-Government project. In line with the findings of the Comptroller's report, those agencies that have developed interactive e-Government projects are more likely to have developed a successful e-Government project.

What iReach has discerned is that should a Department or Agency develop a successful e-Government site then it can act as a catalyst to develop an m-Government strategy.

Strategic Alignment & e-Government Vision

Success in terms of both e-Government and m-Government roll-outs in Ireland needs strategic alignment between the goals of a business and IT infrastructure within an organisation. This may be one cause for the low roll-out of innovative m-Government projects to date. That said this is an area where considerable thought is taking place, with the goal of the Government to introduce a framework for e-Government with emphasis placed on intra-departmental communication.

The focus on developing simple, yet innovative and practical technologies could be taking a back seat to transforming mundane business processes as well. It should also be noted that not all processes can be migrated onto e-Government and m-Government platforms and that targeted, niche services may be the most practical way for some Departments and Local Authorities to roll-out such services for internal and external use.

According to Colm Butler, the roll-out of technologies alone will not be enough to warrant the widespread development of e-Government or m-Government projects. We have to move beyond technology for technology's sake. Prudent use of this resource means exploiting the opportunities for innovation and improved outcomes where there is a good business case. It also means that a central authority should be focused on building or promoting the architecture required to respond to the more integrated performance demands, including the rationalisation required in the governance of the technology itself - looking for shared-service opportunities in a more mature use of technology.

Key Takeaways

- The three key drivers behind the development of m-Government programs are cost savings to the government agency rolling out the technology, the streamlining of internal processes for administrative tasks, and ultimately the facilitation of better access to public service for citizens.
- SMS payment services and access to mobile internet between citizen and local authorities would be an excellent way of extending current e-Government payment facilities.
- With several m-Government projects, high mobile phone penetration rates can help public sector communications with citizens become more effective in areas as diverse as Agriculture, the Marine, and Revenue Online.
- A formal e-Government policy needs to be put into place with a formalised m-Government benchmarking framework to also be included. This will allow Government Departments to investigate the benefits of m-projects through analysis of peers' successes.
- The benefits of e-Government and m-Government projects may not be envisaged fully by Departments and Local Authorities and a closer alignment needs to be made between Public Services and ICT within the sector, focusing initially on simple yet effective projects.

Successful m-Government rollouts in Europe and Ireland

There are many examples of successful m-Government projects that have been rolled out by Government Departments and Local Authorities that can be used as examples of how mobile technologies can be utilised for the benefit of internal staff and citizens. iReach analysed four of these to see how they can be applied to Ireland.

Healthcare

The question of the benefits of mobile internet technologies in the health sector has been outlined in the previous section of this study. Certainly the ability for doctors to access information via tablet devices or PDAs is a good start (although this is not universal throughout every hospital in Ireland currently). The use of SMS messaging to connect with patients is one that iReach would encourage the development of.

A good example of a public sector of an SMS service to patients can be found in the UK. The NHS has implemented a system that sends SMS reminders to patients to remind them of doctor's appointments. This system has been rolled out to 24 NHS Primary Care Trusts.

The system was primarily developed with two goals in mind:

- **Reduce the number of appointments missed by patients.**
- **Helping the NHS save time.**

The system also allows for the targeting of patients with specific illnesses or allergies and reminds them when to turn up for appointments. It was cited as being used in an influenza campaign by one primary care facility in the UK which had shown a marked decrease in missed appointments. The ease of use of the system meant that it was up and running in minutes, was easily searchable, and had cut time needed in terms of administrative duties. In terms of potential security issues, the service via text is an opt-in one.

iReach would suggest that a similar solution would be excellent in Ireland for both primary and secondary clinicians. The savings in terms of costs and administrative time could be significant, as one UK Medical centre reported the SMS facility saving them up to one/one and half hours per campaign launched. The Irish Medical Council has an SMS facility on its website, which allows information to be forwarded to its members giving them updates in terms of meetings

and new research. A similar SMS function as developed by the NHS would be an excellent resource for both citizens and the Health Service, be they Primary or Secondary caregivers. iReach also believes that a similar opt-in/out function be developed to ensure privacy and security.

Transport

iReach has seen a number of Government and Local Authority M-Payment projects being rolled out around Europe. In Ireland, mPark, the mobile parking payment service from Dublin City Council has been available in a wide variety of locations in Dublin 1 and Dublin 2 and has also been rolled out in Sligo. Once a person has registered online, payments can be billed to their credit card or mobile phone bill. The benefits of this are enormous in urban environments that are becoming much busier.

iReach has seen these types of projects rolled out in countries such as Croatia and Austria. Vienna has had this facility in place since 2003 and was the first city in Western Europe to develop it. In Finland, by early 2005, 50% of all users of the Helsinki train and tram mobile ticketing systems were buying at least one mobile ticket per week and 33% were buying a mobile ticket monthly.

Another example can be seen in Estonia where within the city of Tartu, mobile parking payments have been available since 2000. In 2005, over 50% of parking payments in Tartu were being made via mobile phone. Since 2002 long-term and short term bus tickets have also been purchasable via SMS. These projects make Tartu one of the most advanced 'm-Cities' in Northern Europe with a policy of rolling out between three and five new applications a year. With Estonian internet penetration rates of around 53% and a mobile phone penetration rate of 100% it has made sense for cities like Tartu to make payments available via mobile phone for convenience sake.

The migration of certain transport payments to mobile phone would be an excellent way of modernising and creating efficiencies in the public transport system in Ireland. With Bustext and Darttext information available already via SMS, the ability to make payments via text would be a logical next step. Furthermore, with the current development of an integrated ticketing system for public transport in Ireland, there may be scope to extend the system to embrace a mobile technology top-up service for tickets.

Agriculture

Agriculture plays a significant role in the life and history of the state and has also seen a number of significant developments in m-Government projects rolled out over the last couple of years.

The recent SMS project by Teagasc highlighted the benefits of mobile technology to farmers and internal staff. The technology allows for cost savings to be made in terms of postage, phone calls and administrative time. Teagasc found it was very difficult to contact farmers via email and so the best way to generate a stream of contact was via mobile SMS. The proliferation of mobile technologies meant that it was much more likely that farmers would utilise the service that Teagasc were providing.

In an interview with Teagasc analyst Joe Lawler, iReach learned that the SMS service that was being offered by the agency allowed for the dissemination of text reminders relating to open days, farm walks, seminars and other Teagasc activities. This cut down on expenses in terms of phone calls that farmers had to make to administrators within Teagasc to ascertain this information.

The success of this and other prior m-Government programs has seen agriculture become one of the most progressive adopters of mobile technology as a component part of e-Government. iReach would urge continued development within this sector and has learned that plans are already in place for further developments to the Teagasc mobile project with MMS applications planned that would allow for images to be forwarded from the agency to farmers and vice-versa. This would allow for the identification of diseases on crops and other such similar functions.

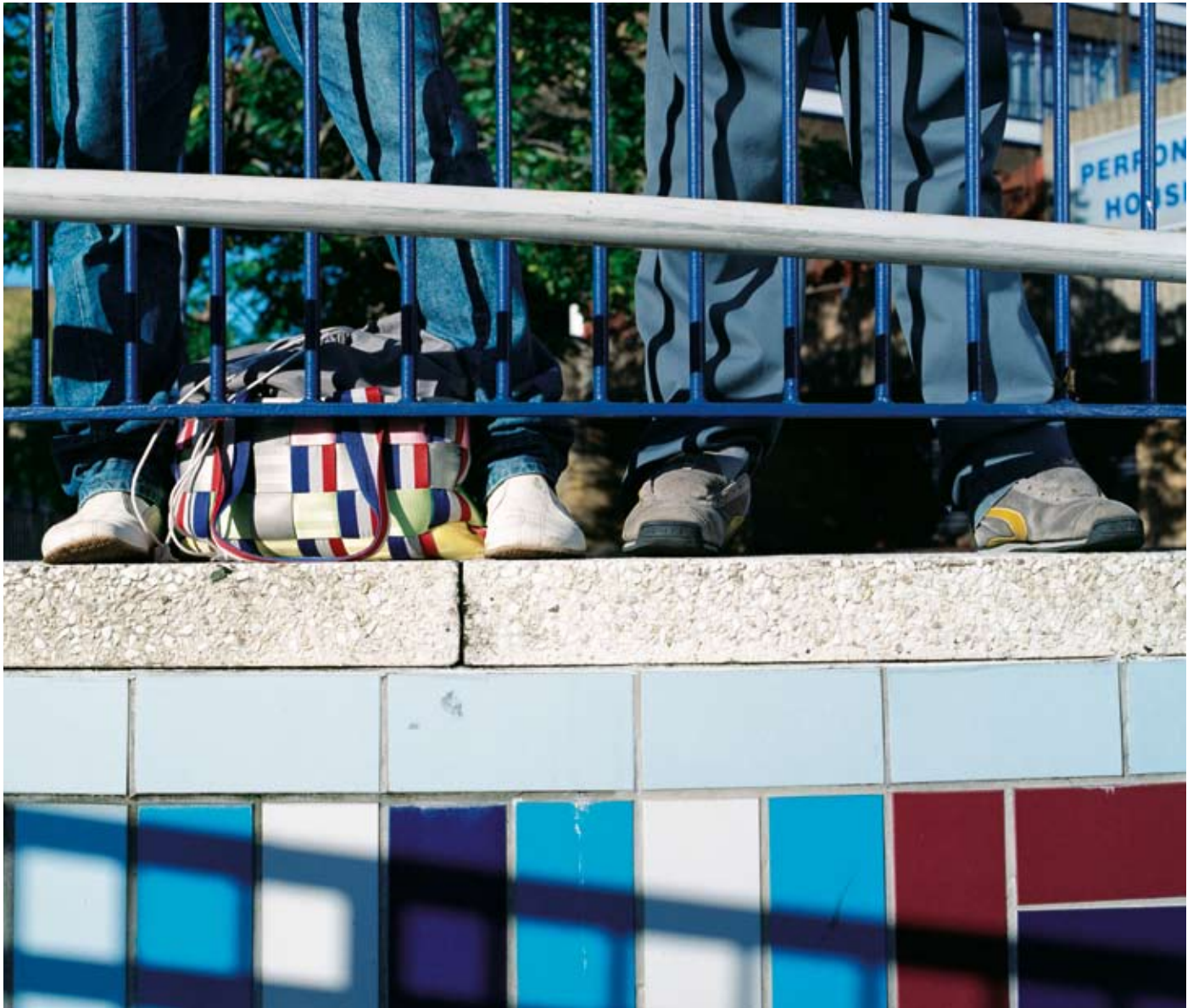
Tourism

A record 7.8 million overseas visitors came to Ireland in 2007, pumping €4 billion into the economy with 4.6 million people visiting the capital according to Dublin Tourism. It is therefore not surprising that mobile technology that tapped into this market would be welcomed.

Dublin Tourism has recently revamped its website, www.visitdublin.com which in 2007 attracted 5 million visitors. This revamp now allows mobile users access via mobile internet. The type of information available to the citizen includes information on where to go and what to do in Dublin.

When the question was put to Dublin Tourism as to how they plan to hook customers in to utilising the mobile facilities the reply was simply that the ability to access information on events, attractions and visitor services anywhere at anytime was the key to the success of the mobile access. It was also stated that the fact that this was the first application of its kind would give Dublin Tourism a huge advantage in terms of brand awareness.

Similar applications exist in Europe with both French (www.Allovisit.com) and German sites (www.moltomedia.de) which allow an array of functionalities such as enabling access to information, booking a room or a restaurant, renting a car or localising a position on a map.



In terms of future applications Dublin Tourism launched a Dublin.mobi site in February 2008 where content will initially be based on content from visitdublin.com. It hopes to develop more mobile specific content in the future. This .mobi site will be one of the first of its kind targeted specifically at mobile phone users.

iReach would look at Dublin Tourism's mobile accessible site as a model by which other sites within this sector could draw inspiration from. In a city such as Dublin, the ability to access information via a mobile handset is extremely handy for locals and tourists.

Key Takeaways

- Healthcare would be an area where mobile internet and SMS messaging could be rolled out with significant benefits in terms of internal administration and access to services for patients.
- The development of M-Payments in Transport would be excellent in terms of allowing more convenient citizen interaction with local authorities.
- Agriculture which has historically been very important to Ireland has continued to develop mobile projects that have significant benefits internally and in terms of citizens' interactions with state bodies.
- Tourism, a €4 billion a year industry, has seen in Ireland the beginning of an adoption of mobile applications to enhance access to information.

Proposed m-Government projects

In this section of the study iReach will look at some of the future, potential m-Government projects that could be developed over the course of the next 24 months. Again examples of these projects from Europe will be highlighted.

m-Voting

m-Voting is one application of e-Government that is starting to see a roll-out in pilots in several jurisdictions. For instance in Estonia the parliament has passed legislation authorising m-Voting should it be feasible. In Estonia, as in Lithuania recently, e-Voting has already been developed which means that m-Voting is a logical next progression to make.

In 2004 in Madrid, Spain the first pilots took place in e-Voting and m-Voting in local referenda via internet or via mobile phone utilising both SMS texting and Java Applets for certain types. 120,000 people took part in this pilot of which 16% participated via mobile phone. SMS Voting pilots have also been tried in the UK in rural areas with mixed success. In the UK, public feeling is that mobile devices should only be utilised for 'fun' applications and that voting is 'too serious' to be done using mobile technology.

Both e-Voting and m-Voting would have significant benefits to the Irish population. They could allow for a greater interest in local government policy through voting in council elections for a start. Both electronic and mobile voting may also encourage more people to vote in general elections. After the last general election it was revealed that almost 400,000 more people would have voted if they had been given the facility to do so either online or through mobile technologies¹. The reluctance to embrace e-Voting in Ireland stems from the failure of the e-Voting technology rolled out prior to the 2002 General Election. iReach would urge a re-think in this area as one way to connect to both younger voters and those working away from their constituencies, and enable them to participate in the democratic process. A limited pilot that would encompass the local or European elections would be an excellent opportunity to test the viability of the technology on a small, manageable scale.

¹Millward Brown IMS

m-Education

Mobile education would cover a number of different areas whether this be notification of exams results, the ability to receive library renewal notices, i.e. learn via text whether a book that you would like is in stock, right through to CAO applications being made via mobile phone.

This last example would be an excellent application to migrate across to a mobile platform. The CAO system can now be accessed online and the next step would be to link it to a mobile platform where information could be accessed with student's unique CAO number. Certainly an alert system that links online CAO applications with a constituent mobile number allowing for changes in the number of points needed for a subject would be an excellent way of keeping students in the loop. It would also eliminate the necessity for continuous paper trails as the information could be stored electronically thus cutting back on administrative costs in the Department of Education.

In terms of mobile education facilities, the example of developments in the city of Tartu in Estonia is a good example of how SMS messages can be used to inform citizens of something as basic as library renewals. Since 2006 the city has developed a project that allows an automatic reminder to be sent to a citizen if requested books become available. An SMS message is also sent to remind a loanee to return their book when it is due. This project is a two way exchange because it is also possible to prolong book rental via SMS.

iReach would see this type of application as being very useful for citizens to access and if implemented in Ireland would have an excellent benefit for both internal and external mobile users.

m-Citizen

iReach has identified several examples of simple, highly innovative mobile projects which illustrate how Government and Local Authorities are engaging citizens with the welfare of their living environment.

Of particular interest was the project rolled out in Tartu where a shortcode number, 1789, has been designated as a number where citizens can call, email or text should they happen across a full trash-can, a broken park-bench, or even a hole in the pavement. The system works through an operator who collects the information, logs where the call has come from (to track down prank calls) and then forwards the information to the appropriate utility company or local council department.

Several County Councils have a facility where an enquiry/complaint can be made online and an appropriate response sought. Fingal County Council is a good example of this type of facility. An individual may make an enquiry or complaint to the council through its website and then decide the format of the response that they would like. The Fingal County Council facility allows for reply via email, SMS or phone.

iReach would see an SMS facility similar to Tartu in Estonia where citizens could text a shortcode number if they wanted to make an enquiry or complaint about an issue that concerns them. This could cover issues such as civil repairs needed that citizens see and then report to the local council or appropriate authority. This would enable much more efficient communications between citizens and local government.

Alternatively a centralised default number could be developed, akin to the Estonian model, for each major town and city in Ireland which would allow an operator to forward details of civil repairs that are needed to the relevant local authority.

Key Takeaways

- e-Voting and m-Voting are potentially very strong projects to develop in the future but may be hampered by previous unsuccessful attempts to roll out e-Voting. Pilots would be strongly advised in this area, preferably at local election level.
- Mobile Education facilities such as CAO online or the ability to utilise an m-Library function would be a good way of tapping into niche public services.
- The development of SMS based mobile projects that allow citizen complaints/enquiries with Local Authorities would allow citizens become more personally involved in taking care of their town/city.
- Location based applications would be ideal to migrate across to an m-Government platform, particularly in terms of Transport and Tourism. They would facilitate a greater efficiency in terms of public knowledge of transport timetables and would allow the public to more effectively plan their travels.



Conclusion

As has been discussed, the benefits of both e-Government and with it m-Government are added convenience and flexibility for both Government and Local Authority staff and members of the public. The ability that m-Government offers to Government and Local Authorities is a much wider reach to a large number of people through mobile devices. Even if wired internet connections such as broadband are increasing, they are still some way shy of the 116% penetration levels of mobile phones.

The fact that there has been a refocus concerning the roll-out of e-Government projects is beneficial to the development of a new Public Sector approach to the planning and subsequent launch of m-Government projects. The key for these projects, is that projects should initially be simple, quick to initiate and offer benefits for both the agency developing the application and the general public. A more formalised framework that addresses both e-Government and m-Government services is the key to a wider development of e-Services and m-Services in Ireland.

In conclusion overseas models of m-Government need to be examined to see what has made their implementations so successful. There are many m-projects that could be adapted for quick-wins in Ireland that have been highlighted in this report. These projects are not overtly complex and would offer real value to both internal Public Service benefits and also for wider public benefits.



