

# **The Digital Divide: Investigating the Mystery on the Island An Exploratory Study of the Digital Divide on the Isle of Man**

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## ***Abstract***

*The aim of this research was to investigate why, despite favourable conditions and managed government programmes to narrow the digital divide, the level of Internet access on the Isle of Man (IOM) continues to under perform.*

*The 'digital divide', defined as the gap that exists between those with and without access to the Internet; the digital 'haves' and 'have nots', is the subject of wide ranging debate and research about its causes and remedies.*

*A mixed methodology was used for an exploratory study based primarily on data from qualitative semi-structured interviews with supportive quantitative census research instruments. Analyses focussed on revealing the hitherto unrecognised underlying causes of the IOM digital divide.*

*The qualitative methodology used for this research enabled the identification of two groups of Islanders as the likely sources of a relatively static Internet access level since 2001. These findings provide a basis for IOM management to revise their digital divide strategy, thus creating potential for savings and stakeholder benefits.*

*Although the insights provided by this study are specific to the IOM, they may also resonate with similar environments by providing a framework for investigation, hypotheses and questions for future research about the digital divide.*

*Key Words: Digital Divide, Internet, Qualitative, e-Government, IOM, UK*

## **1 INTRODUCTION**

### **1.1 Research Aims and Scope**

The following pages represent a summary of a much larger document describing research undertaken into the digital divide in the Isle of Man (IOM). The aim of that research was to investigate why, despite favorable conditions and government programmes to narrow the digital divide, the level of Internet access on the Island continues to under perform. An additional objective was to derive findings that may benefit future investigation into the digital divide and foster a wider use of qualitative research methodologies in the process.

In common with many governments, narrowing the digital divide has for several years been a goal of the IOM administration's ICT strategy. The principal aim of the IOM strategy is Internet access parity with the UK, based on a relatively strong economy and a series of managed programmes which provide ICT infrastructure and related training to the general public. A

George Ryder

The Digital Divide: Investigating the Mystery on the Island An Exploratory Study of the Digital Divide on the Isle of Man

general as opposed to a particular IOM government administration point of view for this research would ideally be realized using a sample drawn from the IOM population; the users of the IOM ICT programmes. Collecting and analyzing data from a sample of around the 4,000 cases needed, given a track record of low response rates on the IOM for postal surveys, would be prohibitive in terms of the time and resources available for this research. An alternative approach based on the view of representatives of the IOM administration, despite a risk of bias, avoided these constraints. These representatives form an internal strategy management organization, established in 2001 and staffed by senior civil servants from all the departments that make up the IOM administration. This authoritative organization should in the interim have gained considerable experience and insights into their digital divide and the effectiveness of their approach to narrowing it.

The scope of this research embraces an exploratory study to investigate this experience in conjunction with IOM empirical research instruments in the form of census and related survey reports. Saunders *et al.* (2003, p. 96), define exploratory studies as seeking “new insights to ask questions and to assess phenomena in a new light. It is particularly useful if you wish to clarify your understanding of a problem”. Meeting the study’s research aims therefore was based on using secondary data reflective of the IOM population and primary qualitative data resulting from exploratory interviews with IOM civil servants.

The digital divide is defined as the “the gap between information and technology ‘haves’ and ‘haves not’; between those with access to the Internet and those without” (Lentz 2000, p. 355). While this definition is a commonly used one it is sometimes dismissed by many as being too simplistic, a good example being Hubregtse 2005, p.164. Despite its many facets, the general Lentz (2000) definition occurs in much of the literature reviewed for this study and is the one referred to in this paper. Another recurring theme in literature about the issue of the digital divide and shared by the IOM government, is that its resolution is best suited to government because of its scope and impact on society in general. A document confirming this position, published in 2001 by the Council of Ministers (the highest legislative body in the IOM government) entitled ‘An e-Commerce and e-Society Strategy for the Isle of Man’, prioritized the resolution of the digital divide problem (Charteris 2004, p. 5).

A significant number of the several publications constituting the bibliography of this paper discuss a number of overt causes of the digital divide, highlighting in particular levels of income, education and the elderly. The possibility however that in post-modern industrial societies it may be due to other, deeper social issues related for example to ethnicity, language and social exclusion is widely debated. Lack of access to ICT and related training are also cited, although these causes are sometimes criticized as irrelevant, principally due to the evolving cheapness and ubiquity of computer related technology and communications. The question of whether governments are identifying the right causes of the digital divide is the subject of debate and disagreement by academia and business alike. Central to this debate is the concern that taxpayer funds may be wasted if the wrong causes are being addressed. Indicating if this may also be the case in the IOM is the principle aim of this exploratory study.

## 1.2 Research Question and Hypothesis

The focus of this research was to explore the causes of the IOM’s digital divide in order to identify if the government’s strategy to narrow it has been effective in terms of the IOM’s own performance criteria and the findings of this study.

The overall performance of their strategy, based primarily on ICT programmes, is measured by the IOM in terms of the proximity of the Island’s level of Internet access to a UK benchmark. Internet access in this context is defined as the total number of adult individuals in a population accessing the Internet (e-Envoy, 2006). Literature confirms the lack of ICT related infrastructure

and related training as important causes of the digital divide but also ranks per capita income, education and age levels above them. Because of this, improvements relative to the UK for per capita income, education and age are also benchmarked. The IOM approach to measuring the performance of their digital divide strategy is incorporated into answering the following research question:

*Has the IOM's 2001 strategy to narrow the digital divide, after a period of five years, achieved comparable Internet access levels to the UK, through addressing the right causes of it?*

The study hypothesis and proposition is that the principal cause/s of the IOM digital divide are *other* than insufficient constituent ICT infrastructure and training; the main focus of the Island's strategy.

Given the dimensions and complexity of the digital divide and the fact that it is a phenomenon usually manifested at the level of a country, researching it can represent a daunting exercise. The IOM however was judged to be a suitable location to meet the aims of this exploratory study. This is mainly due to the experience of its management with programmes to narrow the digital divide, the availability of relevant research instruments and the Island's size, which in many respects resembles that of a large sample.

### 1.3 Report Structure

The remainder of this paper incorporates an *overview* of a significant body of the literature contained in a bibliography of just under 200 publications, used to provide a thematic framework on which to base the coding structure employed in the collection of interview data. A summary of the methodology that underpins this research is followed by analysis and findings derived from coded interview data and quantitative research instruments.

These findings can have implications for IOM stakeholders other than government, especially in terms of the possible cancellation of ICT programmes, provided free of charge to the general public. The qualitative data collection questionnaire used reflects this remit by probing various themes identified in literature that deal specifically with constituent related issues. Specific questions about stakeholders include the groups in society most affected by the IOM's digital divide strategy and its impact on taxpayer funds.

Despite its small population, when assessed on a relative per capita basis, the IOM ranks as a diverse and successful economy compared to some of its larger neighbours.

## 2 THE IOM

Situated in the centre of the British Isles, the IOM is an internally self-governing dependent territory of the Crown, with a population in of just under 80,000 residents in April 2006, representing a rise of some 5.3 % since 2001. The Island has strong historical links with the United Kingdom, but is not part of it.

As an externally focussed, services based economy with a GDP in excess of £1 billion the IOM depends on and is directly affected by, the business environment in its immediate neighbours and trading partners in the wider world. Because of this ICT is critical, especially to sustain the type of modern infrastructure and business environment that attracts foreign investment. Narrowing the digital divide in order to keep the Island attractive to investors and the external markets they serve is consequently a key element the IOM government's ICT policy.

In 2001 however, despite similar income and age and better educational levels, the IOM trailed the UK by 9% in terms of the percentage of the population accessing the Internet. This revelation was the catalyst for the implementation of a series of government programmes focussed on improving performance in terms of Internet accessibility and thus narrowing the digital divide for

the Island’s population. The resultant programmes focus on the provision of ICT infrastructure and related training for the Island’s ‘have nots’.

A review of literature about the digital divide provided an underpinning theoretical framework for the collection of this study’s qualitative data.

### 3 LITERATURE ABOUT THE DIGITAL DIVIDE: AN OVERVIEW

The advent of universal access to the Internet, especially over the last decade, has generated widespread prosperity and growth as well as giving rise to a number of accompanying issues. One issue in particular, that of the digital divide, has been the subject of controversy and debate from varying perspectives, geographies and contexts by some of the world’s leading academics. This debate has spawned a significant body of literature containing issues and themes germane to this research.

A number of criteria were applied to the literature reviewed as constituted by the bibliography of just under 200 publications attaching to the original research on which this paper is based. Information and communications technology changes quickly and these changes can sometimes have a wide ranging impact on issues such as the digital divide. Because of this an important criterion in selecting literature was that it should be as recent as possible. It was also judged important to identify literature that referenced key themes such as the causes of the divide, the role of government and the variety of solutions aimed at narrowing it. These themes provided a theoretical framework on which to base the collection of data. A theoretical framework sets the boundaries and thematic underpinning, which characterize research.

The thematic hierarchy, boundaries and interrelationship identified in literature for this research are illustrated in the following diagram:

#### The Digital Divide: Theoretical Framework

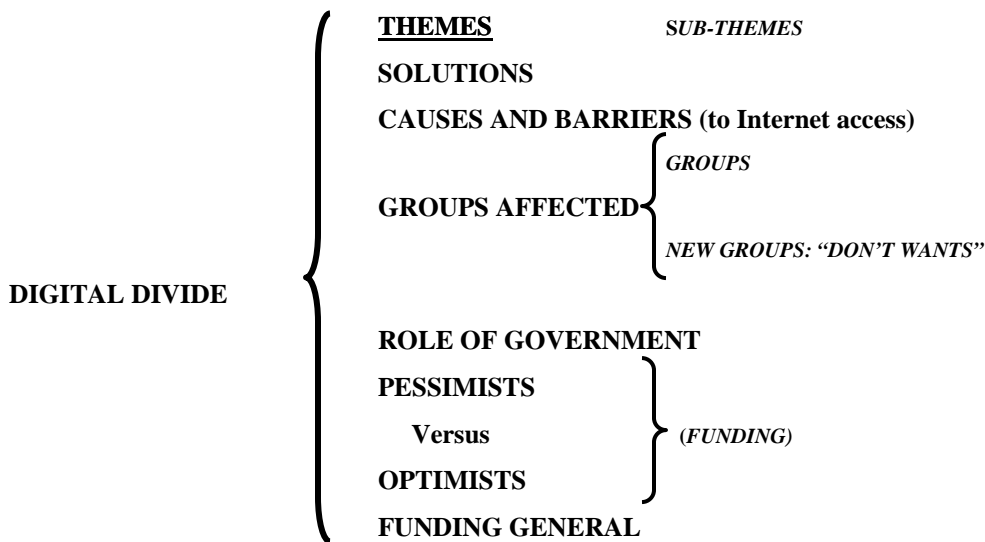


Figure 3.1 Digital Divide: Theoretical Framework

This general and largely self-explanatory framework reflects a thematic richness in terms of the hierarchy, scope and diversity of the digital divide phenomenon.

Literature about the divide also reflects some particular characteristics. One of them is that the problem is usually evaluated and explored as a macro phenomenon at the level of countries or

large population concentrations. Because of this, much of the resulting work is characterized by a positivist methodological approach based on secondary research instruments, often in the form of government census and survey quantitative data.. Another such characteristic is the degree of disagreement and debate about many aspects of it. Law (2004, p. 17), references the intensity of the debate as follows “but almost from the beginning the arrival of electronic information has created a whole series of wars, accusations and debates ...”. Despite this, there is broad agreement about the evolution of the digital age and the general causes of the digital divide.

### **3.1 Digital Evolution and Culture**

The evolution of an information economy and the digital divide are viewed as a logical progression from earlier societal developments, starting with the industrial revolution. That revolution is typified by the advent of small workshops and the invention of the steam engine in the eighteenth century. The second was characterized by larger workshops facilitated by the harnessing of electricity. The third revolution came into fruition in the 1970’s with the diffusion of the transistor, the personal computer and telecommunications. “In other words, what we have is not an Internet economy but an Information economy in which computers and the Internet play an essential enabling role” (Warschauer 2003, p. 12). The 1960’s and 1970’s brought innovations in computing and technology which laid the foundation for the Internet and the World Wide Web. The post-industrial information society was developed, firstly with the simultaneous appearance of the minicomputer and of networked computing, then with the development of the personal computer Gere (2002, p. 113). Gere (2002) also describes the pivotal role of technologies that emerged from the Cold War (1950’s to 1960’s) maintaining that technology has in effect spawned a societal ‘digital culture’.

This evolutionary process, which elapsed over several years, and in different contexts and geographies, has resulted in a progressive widening of the spectrum of the digital divide and its principal elements, which are:

- (a) “The Global divide: Internet access gap between industrialised and developing countries.
- (b) The Social divide: the gap between information rich and poor in each nation.
- (c) The Democratic Divide: the difference between those who do and do not use digital resources to participate in public life” (Norris 2001, p. 4).

Writers on the subject are also in agreement about the causes and barriers that tend to inhibit accessing technology and the Internet.

### **3.2 Causes and Barriers to Internet Access**

The causes of the digital divide and the associated barriers to Internet access have a central relationship to most of the other themes identified in literature about the digital divide. Government strategy and funding for programmes to narrow the divide are examples of such themes as well as being the source of intense debate.

The polemic nature of the debate centers on a disagreement about what the real causes of it are. Several writers, known as ‘optimists’, are convinced that an inadequate level of proliferation of technology and related training is the main cause of the divide. Their protagonists, the ‘pessimists’, assert that deeper societal factors, such as ethnicity or social exclusion and not access to technology, are principally to blame.

In order to identify the relative importance of the causes of the digital divide and barriers to Internet access several papers on these topics were analyzed, The basis for selecting an author for this analysis was that a definitive stance had been taken, on the relative importance of the barriers to Internet access or causes of the divide being described. The result was that most authors

consider the principal overt causes of the digital divide to be low levels of education followed by income, with age, referring to the over sixties, as a close third. IT infrastructure and ethnicity are ranked low as barriers to Internet access, at sixth and seventh respectively. These barriers are reported as affecting some social groups more than others for example, the poor and ethnic minorities.

In reviewing the themes and sub-themes of the digital divide, a number of more detailed characteristics or thematic attributes of them were identified. These refining elements facilitated the definition of a complete thematic framework which underpins the data collection and coding methodology used for this research.

## 4 RESEARCH STRATEGY AND DATA COLLECTION METHODOLOGY

### 4.1 Background

An ideal approach for this type of research would involve a sample drawn from the users, and consequently, the best judges, of the effectiveness of the government's ICT programmes. In order to undertake such a survey and achieve a 95% degree of certainty for data drawn from a population of 80,000, around 370 complete and correct cases would be required (Saunders et al 2003, p 156). Based on using a postal survey (the cheapest method) an average response rate of around 10% for postal surveys in the IOM, a sample size of nearly 4,000 respondents would be required. As a survey of 4,000 cases was outside the time and cost limitation of this research, an alternative approach was required.

An exploratory study research vehicle was chosen because, in addition to avoiding excessive costs its suitability was indicated because of:

- The absence of any empirical evidence hitherto as to the *underlying* causes of the IOM digital divide, signifying that exploratory research would be an appropriate vehicle for identifying them.
- The extent of the gap in Internet access levels between the IOM and the UK in 2001, which called into question the proposition that levels of technology, income, education and age were primarily responsible for it, as presupposed by the IOM digital divide strategy.
- The availability of related predetermined variables (income, age, education) from an interim IOM census carried out in 2006 together with an extensive knowledge base about the digital divide represented by IOM civil servants.
- Exploratory research can serve as a pilot study on which to base and more efficiently target future investigation.

A review of literature resulted in the definition of a framework of digital divide themes and the relationships between them. Themes and sub-themes were further subdivided into thematic attributes with each attribute being given its own unique code. A coding structure resulted which facilitated the thematic coding of qualitative interview data as well as the creation of new codes for attributes not thematically defined.

This study was based on data collected from qualitative interviews in conjunction with statistical research instruments and related survey reports. Census and survey research instruments for 2006 facilitate a longitudinal comparison with similar IOM data for 2001. Longitudinal comparisons were intended to test the basis of the IOM digital divide strategy which maintains that variances in income, education and age are mainly responsible for their Internet access levels. Data derived from these research instruments were used to compliment the information provided by IOM managers about the causes underlying the IOM digital divide. The headings in the following

figure illustrate and categorize the study’s research strategy and data collection methodological components:

**Research Strategy and Data Collection Methodology Summary**

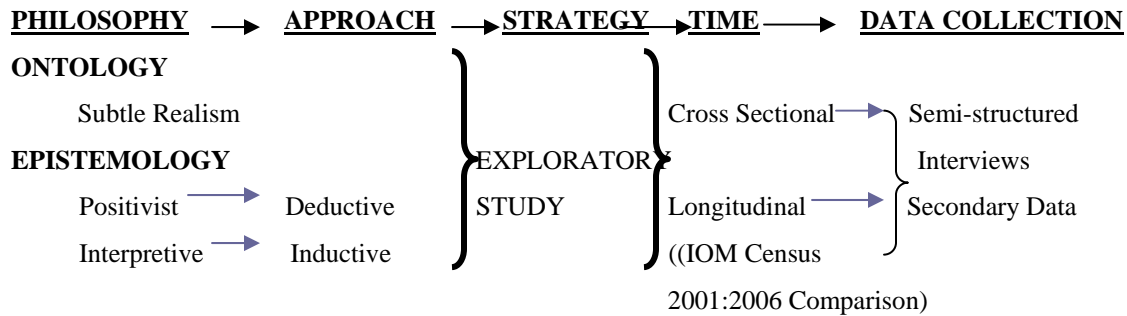


Figure 4.1 Research Strategy and Data Collection Methodology

The five stages illustrated above are organized hierarchically commencing with the research philosophy. The ontology of this research is characterized by a positivist component within an interpretive exploratory study, which seeks to identify phenomenon and assemble knowledge about the IOM digital divide. This together with the possibility that there exists knowledge or aspects of their digital divide that may not be recognized hitherto by respondents as affecting them, are characteristics which conform with the Saunders *et al.* (2003, p. 85) and Smith (2003, p. 296) definitions of a realist ontology. As this research also involves interpretations by respondents that are potentially going to be influenced to a degree by ‘prompts’ from the researcher, a refinement of its realist ontology to that of ‘subtle’ realism applied (Ritchie & Lewis 2004, p. 20). The philosophical underpinning for this research is thus indicated as comprising an ontological stance of ‘subtle realism’ and a mixed positivist and interpretive epistemology. The research approach, as underpinned by the study’s ontology and epistemology, is deductive in terms of the secondary quantitative census data involved and inductive, due to the use of primary qualitative data. The resulting paradigm is thus mixed as it involves both positivist and phenomenological research. This multi-method approach facilitated triangulation and thus enhanced the validity and reliability of key data elements.

**4.2 Summary**

The mixed research methodology used for this exploratory study was based on data from qualitative interviews and statistical research instruments. A mixed methodology is deemed to strengthen the quality of data and the findings derived from them. Together, these factors facilitated the collection of reliable data for analysis and interpretation.

**5 DATA COLLECTION AND ANALYSIS**

The collection and coding of interview data consisted of relating interview textual extracts to thematic attributes and applying the codes listed in the study code book to them. Once coded text

was reduced and synthesized to create 'coding units' of a standard format in order to enable their aggregation into thematic clusters.

On completion of the coding process the resulting coding units were tallied by theme, sub-theme and attribute. The main objective of tallying responses was to gauge the emphasis put by interviewees on particular themes and their attributes, relative to others; as opposed to being used for statistical evaluation. Once completed, the tallied results of the IOM interviews, together with quantitative secondary research instruments constituted the data analysed in order to realise the aims of this study.

## 5.1 Data Analysis

The aim of this research was to explore the underlying causes of the IOM digital divide and indicate if the government's performance in managing it, based primarily on ICT programmes, is addressing the right ones. While assessing the effectiveness of the ICT programmes, and this study's proposition, was based on qualitative data, quantitative research instruments provided the information needed to test its hypothesis. Based on incorporating the same approach as the IOM for assessing progress with managing their digital divide strategy, the question posed by this exploratory research was:

*Has the IOM's 2001 strategy to narrow the digital divide, after a period of five years, performed similarly in terms of Internet access levels to the UK, through addressing the right causes of it?*

The hypothesis and proposition of this study is that the principal cause/s of the IOM digital divide are other than insufficient constituent ICT infrastructure and training, which is the main focus of the Island's strategy.

Analyzing the data needed to answer the research question posed by this study was divided into two parts as follows:

- Testing the study hypothesis based on longitudinal comparisons between IOM 2001 and 2006 data including the corresponding UK benchmark statistics for 2006.
- Analyzing coded qualitative data in order to explore the experience of IOM managers in terms of the effectiveness of their digital divide strategy and their views about the underlying causes of it, in order to verify the study proposition.

Respondents in general tended towards the 'pessimistic' side of the debate between the two protagonists. The general consensus was that the current government strategy involving expenditure on ICT based programmes is ineffective. They further maintained that the IOM digital divide was not due to lack of technology or the existence of minority groups (women and ethnic minorities).

## 5.2 Summary: Quantitative and Qualitative Data Analysis

In summary, the main findings from the analysis of IOM quantitative research instruments and qualitative sample data are as follows:

- **Age demographics** changed minimally since 2001, including for the over sixties, while the level of per capita income increased and now exceeds the UK benchmark by 30%. Education levels in 2006 are similar to those in 2001.

- **Internet access** was estimated for the IOM population in 2006 to be 55% or as being roughly in line with the growth in population for the period 2001 to 2006. Respondents also indicated that the ICT programmes to narrow the digital divide had little or no effect on Internet access levels.
- Resonating literature on the subject the generally recognised **causes** of the digital divide were reported by several IOM respondents as being low levels of income and education and the elderly (age),
- *Underlying* causes specific to the IOM digital divide issue were identified within the **groups** represented by the elderly and rural communities. In particular a hitherto ignored group the ‘come overs’, representing, with their descendants, a majority at 52% of the IOM population was identified. This group is deemed to be more amenable to technology than the indigenous, mostly rural islanders, especially for the over sixty age group.
- A **pessimistic** stance was taken by most respondents indicating a consensus that funds invested in ICT programmes are misdirected and that the causes of their digital divide are now recognized as being other than those which constitute the ICT focus of their current strategy.

The proposition of this study; that the principal cause/s of the IOM’s digital divide are indeed other than those on which IOM strategy is based, is indicated by these findings as being upheld. These findings are revealing in terms of new thinking of the government about the IOM digital divide.

## 6 DISCUSSION OF FINDINGS

The research findings of this exploratory study indicate that its hypothesis, proposition and principal aim have been satisfied. Key finding of this research concerned a group named the ‘come overs’, (British immigrants who took up residence in the IOM, especially over the last 30 years) and who in 2006 represented 52%, some 42,000 residents, of the IOM population. Because they originated from industrialized regions in the British mainland these immigrants are deemed to be relatively receptive to technology. The remaining 48% of the IOM population represents 38,000 indigenous Islanders 20% of whom, or 7,600 individuals, are aged over sixty. According to literature on the subject, being both rural and elderly this indigenous group is likely to be averse to the Internet and have relatively static, low levels of connectivity to it.

The IOM 2001 census (Isle of Man Census, 2001, [www.gov.im/censuss/2001/Table 50](http://www.gov.im/censuss/2001/Table%2050)) reported that only 20.6 % of the over sixties on the Island had Internet access. Given similar age demographics and a relatively static overall Internet access level between 2001 and 2006, this suggests that around 6,000 members (79.6% of 7,600) of the Island’s rural elderly (7.5% of the total IOM population), may be without Internet access. Without published statistics for 2006 no further implications are made for the remaining elderly (the ‘come overs’) or other demographic groups who are expected typically to have more variance and relatively higher access levels in their Internet profiles.

Also identified was a smaller group, classified in literature as the ‘don’t wants’, typically made up of wealthy retirees who can, but prefer not to, access the Internet. As an attractive location for retirement, respondents considered that this group constitutes an additional underlying cause of the IOM digital divide albeit, at an estimated 2,000 individuals, not a significant one.

An additional objective of this study was to derive findings that may benefit future investigation into the digital divide and foster a wider use of qualitative research methodologies. This investigation has succeeded, using a qualitative research methodology, in identifying

demographic and historical phenomenon specific to the IOM, in the form of two groups. These groups, who together represent around 10% of the IOM population in 2006, are indicated as being at the core of the ongoing Internet access level disparity with the UK; despite a thriving economy and government programmes. The perpetuation of an ineffective and costly IOM digital divide management strategy is now indicated as being due to a total reliance on a quantitative performance evaluation model.

## **7 CONCLUSION AND IMPLICATIONS**

### **7.1 Conclusion**

The main objective of this research was to investigate the underlying causes of the digital divide in the Isle of Man (IOM) and indicate if a series of government programmes, aimed at curing the problem are addressing the right ones. The methodological approach to meeting this objective was an exploratory study, based on semi-structured interviews with a sample of government representatives. Statistical data drawn principally from IOM 2001 and 2006 census research instruments provided quantitative context for the exploratory focus of the research.

The research findings pointed to causes other than those on which the IOM digital divide strategy is based and in that context two groups were identified as likely sources of the problem. In identifying these groups, this study points to a reassessment of the Island's approach to, and expenditure on, their digital divide programmes. Such a reassessment may prove productive in terms of the amount of effort and resource used by the current programmes, which are directed at the IOM population in general. By adopting a strategy based on targeting specific groups, who hitherto have largely failed to benefit from government online services, the IOM should both save money and increase Internet access performance. In identifying these groups, who number several thousand inhabitants, the findings of this study also indicate the principle source of the ongoing Internet access disparity with the UK. It should also indicate the utility and benefits which can result from the use of qualitative research methods for this type of investigation.

### **7.2 Implications**

A further objective of this study was to derive findings that may usefully inform future research about the digital divide in the IOM and also, potentially in other similar locations. Based on the findings of this study, focused qualitative research can now be undertaken by the IOM government given the savings and efficiencies that its use may represent over an approach based solely on a positivist strategy. In addition, an ongoing positivist strategy for research into the specifics of the IOM digital divide is now more feasible as it can avoid surveying the whole population by concentrating on, for example, the indigenous rural, elderly of approximately 7,600 residents, identified by this study.

While this study is specific to the IOM its implications in terms of research about issues such as the digital divide are potentially much wider. These include:

- Updating theory about the digital divide based on a wider use of qualitative research.
- Developing research based strategies to change behavior, e.g. tailored programmes for specific groups such as the elderly, based on research as opposed to a 'one size fits all' approach implicit in general ICT programmes.
- Where research instrument availability permits, using a triangulating methodology in order to increase the validity and reliability of data.

Although the findings and insights provided by this study are specific to the IOM, they may therefore also resonate with similar environments by providing a methodological framework for hypotheses and questions for their future research into the digital divide.

## **8 REFLECTIONS**

Some particular aspects of this research were noted during its implementation phase. These include observations about the choice of respondents, the issue of replacing constituent facing legacy processes and systems with new technologies and the potential benefits of a phenomenological research agenda.

### **8.1 Respondents**

Collecting survey data from a sample of around 4,000 cases while ideal would have been prohibitive in terms of the time and resources available for this research. The alternative approach used (of respondents drawn from the IOM administration) not only avoided these constraints but produced 'pilot study' type results containing precursory information that can now enable specific segments of the Island's population to be targeted for future research.

The stated limitations of this research included the possibility of respondent bias with regard to the effectiveness of their digital divide strategy. The actual information collected however implies the opposite, as it demonstrates a marked degree of impartiality and objectivity, which underpins the reliability of the data analysed.

Respondent data revealed that there is already sufficient embedded organizational knowledge to identify and thus address the underlying causes of the IOM digital divide. Being able to tap into and consolidate this knowledge across government departments, augurs well for the effectiveness of research carried out by third parties, notwithstanding their being modern and proactive administrations like that of the IOM.

### **8.2 Legacy systems and e-Government**

e-Government refers to the delivery and administration of Government products and services over an IT infrastructure such as for example, the provision of information electronically using Internet portals, online tax assessment and electronic voting (Detlor & Finn 2002, p 101). Not being able to extend the reach of e-Government through a narrowing digital divide can signify significant cost duplication due to the ongoing need to retain the legacy systems required by the 'have nots' in society.

Identifying the real causes of the digital divide however, is not necessarily synonymous with being able to subsequently easily eliminate them, as in the case of the 'don't wants'. Perhaps for reasons such as this, some of the more recent attempts to generally accelerate Internet access levels through the use of digital TV (DTT) have not been very successful. This is the case in particular for the elderly, who represent a growing segment of populations in post modern and affluent societies such as the IOM and the UK (Gunter 2004, p.223).

This type of phenomenon can represent a dilemma for government who, like the IOM with its relatively static digital divide, may experience diminishing returns on incremental expenditure generally and on e-Government and ICT programmes in particular. It may also signify that governments need to research their digital divide and e-government strategies in order to more effectively target and deploy the considerable levels of effort and expenditure often involved, to better meet the needs of their constituents.

### 8.3 Research Approach

Positivist research is concerned with implications (causes), but qualitative research can help to increase new understanding, its value being to find out what is going on behind the statistics (Collis & Hussey 2003, p. 76). In the specific case of the IOM, qualitative research was able to identify groups of constituents who are indicated by literature and respondent information as likely to be an important part, of the digital divide problem. Had this research been based on quantitative analysis only, the possibility is that these groups would have been ignored as 'outliers' since they individually account for under 10% of the population (Hair *et al.* 1998, p. 38).

This study may also add to the limited body of qualitative research examining the factors underlying the phenomenon of the digital divide and suggest a model for undertaking it. This model is akin to that of a laboratory where small island environments like the IOM facilitate research and discovery, through representing a total population, while having the dimensions of a large sample.

### References

- Charteris (2004) Digital Divide Review: IOM Government, Charteris.
- Collis, J Hussey, R (2003) *Business Research*, 2<sup>nd</sup> edn., London Palgrave.
- Detlor, B Finn, K (2002) *Towards a Framework for Government Portal Design*, Idea Publishing Group
- e-Envoy (2006) , Internet Access: Leading a Cross Government Programme,  
[http://archive.cabinetoffice.gov.uk/e-envoy/briefings-top/\\$file/access.htm](http://archive.cabinetoffice.gov.uk/e-envoy/briefings-top/$file/access.htm)
- Gere, C (2002) *Digital Culture*, Reaktion Books Ltd.
- Gunter, B (2003) New Information Perspectives, Aslib Proceedings, Volume 55, Number 112, pp 43-59, Emerald Group Publishing Ltd
- Gunter, B (2004) The prospects for e-Government on Digital Television, Aslib Proceedings: New Information Perspectives, Volume 56, Number 4, pp 222-233, Emerald Group Publishing Ltd
- Hair, J Anderson, R Tatham, R Black, W (1998), '*Multivariate Data Analysis*', 5<sup>th</sup> Edn., Prentice Hall
- Hubregtse, S (2005) The Digital Divide within the European Union, *New Library World*, Volume 106, Number 1210/1211, pp 164-172
- Isle of Man Census, (2001), [www.gov.im/censuss/2001](http://www.gov.im/censuss/2001)
- Isle of Man Census, (2006), [www.gov.im/census/2006](http://www.gov.im/census/2006)
- Isle of Man Digest of Economic and Social Statistics (2006), Section 11: Education, Economic Affairs Division, Isle of Man Treasury.
- Isle of Man General Index of Retail Prices (2006),  
<http://www.gov.im/treasury/economic/data/inflation.xml>
- Isle of Man National Income, (2004/6), Table 7, Economic Affairs Division, IOM Treasury
- Law, D (2004) Bridging the Digital divide: A review of current progress, *Library Management*, Volume 25 Number 112, pp 17-21, Emerald Group Publishing Ltd
- Lentz, R (2000) "The e-evolution of the digital divide in the US a Mayhem of computing metrics", *Info*; Volume 2 No. 4
- Norris, P, (2001) *Digital Divide*, Cambridge University Press.
- Ritchie, J Lewis, J (2004), *Qualitative Research Practice*, Sage
- Saunders, M Lewis, P and Thornhill, A (2003) *Research Methods for Business Students*, 3<sup>rd</sup> edn, Prentice Hall
- Smith, M (2003), *Social Science in Question*, The Open University, Sage

- UK Educational Statistics (2001) UK Department of Education, Table 4.9,  
[www.dfes.gov.uk/statistics/dc/vol/v0302/index.html](http://www.dfes.gov.uk/statistics/dc/vol/v0302/index.html)
- UK National Statistics (2006), First Release Internet Access; Households and Individuals, p. 3  
<http://www.statistics.gov.uk/pdfdir/inta0806.pdf>
- UK National Statistics Online (2006), Focus on Consumer Price Indices,  
<http://www.statistics.gov.uk/statbase/Product.asp?vlnk=867&More=N>
- UK National Statistics (2006), Population Estimates,  
<http://www.statistics.gov.uk/CCI/nugget.asp?ID=6>
- Warschauer, M (2003) Technology and Social Inclusion: Rethinking the Digital Divide, The MIT Press