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Collection of ICT Statistics in Ireland – Commission for Communications Regulation (ComReg)

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1 Introduction

The Commission for Communications Regulation (ComReg[1]) is the statutory body responsible for the regulation of the electronic communications sector (telecommunications, radio-communications and broadcasting transmission) and the postal sector in Ireland. ComReg was formed in December 2002 to replace the Office of the Director of Telecommunications Regulation (ODTR) which was established in 1997.

ComReg collects a considerable amount of data on the Irish electronic communications sector, from both an industry and consumer perspective. ComReg's Research Unit is staffed by two analysts (with academic and industry backgrounds in economics and statistics) and a manager (with a regulatory and economic background). This paper discusses both the primary and secondary data collected by ComReg, the manner in which data is analysed and disseminated and the challenges of data collection and interpretation.

In November/December 2009, an external audit was conducted on the statistical information gathering and survey process within ComReg, which operates under the remit of the Research Unit. This was the second such audit that had been carried out over the last eight years. In its executive summary of the audit report, the auditors concluded that:

"It is apparent from our high level review and examination of documents, that ComReg has in place effective processes and control procedures which are designed to monitor statistical information gathering and survey processes and to identify whether adequate information had been provided by the operators. No matters came to our attention during the course of our audit review which would lead us to conclude that these controls are not operating effectively."

Given the external auditor's belief that ComReg's statistical processes and procedures are operating effectively, the onus remains on the Research Unit to maintain the high standard of data collection and analysis that has evolved over the last number of years and to strive for continuing improvements in its statistical methodology.

[1] http://www.comreg.ie

2 Quarterly Review data collection

2.1 Overview

ComReg's predecessor, the ODTR, began to collect primary data on the Irish telecommunications market in 1999. Prior to this date, data was collected primarily by the national statistics office - the Central Statistics Office (CSO), and the ministry responsible for policy in the area of telecommunications, now known as the Department of Communications, Energy and National Resources (DCENR). In addition the incumbent telecommunications operator, Eircom (formerly Telecom Eireann) collected primary data on its subscribers, quality of service etc., which in turn was provided to bodies such as the Organisation for Economic Co-operation and Development (OECD).

Following the publication of an annual market review[2] in November 1999, the ODTR published its first Quarterly Key Data Report on March 22nd, 2000. Since that date, ComReg has continued to collect primary statistical data from authorised operators on a quarterly basis, in order to both understand current trends in the Irish communications market and inform external users.

The Quarterly Key Data Report aims to represent at least 95% of the total electronic communications market in Ireland. Because electronic communications networks and services can be offered in Ireland without the need for a preceding licence or authorisation, not all providers of networks and services operating in the Irish market may provide data for the report. There is a €500k revenue threshold, below which operators are not required to provide data.

Historically, ComReg's Quarterly Key Data Reports have adopted a rigorous and exacting standard, both with regard to accuracy and completeness. This is notwithstanding the fact that occasionally, the available data is not as complete or accurate as ComReg would ideally wish it to be. However, ComReg is intent, on an ongoing basis, to improve its statistical standards wherever possible.

2.2 History of the Quarterly Report

As with any new data gathering process, there were some initial difficulties. A combined questionnaire was initially sent to all operators including fixed line, mobile and cable companies. With evolving market developments in telecommunications products and services, data collection from fixed line operators became more detailed and extensive, it was decided that a specific mobile questionnaire was needed to be issued to the mobile operators and a combined questionnaire to the fixed and cable companies.

Increasingly Irish mobile operators are being asked for more and more data. This is an important issue as it is incumbent on ComReg to ensure that data requests to telecoms operators are not overly burdensome. As ComReg is called upon by market

[2] Liberalisation in the Irish Telecommunications Market – one year on (ODTR document 99/71) available at http://www.comreg.ie/_fileupload/publications/odtr9971.pdf

operators, academic institutions and international organisations for data requests and the production of reports, ComReg must have in place information systems to respond efficiently. It should also be noted that ComReg tends to receive duplicative data requests which adds to the data collection burden for both telecoms operators and NRAs. There is certainly a need for standardisation among institutions in terms of data collection, e.g. the EU Commission's broadband definitions vs. OECD broadband definitions.

Responses to the questionnaires were initially low as operators were reluctant to respond due to concerns regarding confidentiality and the manner in which data submitted would be used. The ODTR worked with the industry to establish guidelines for handling commercially sensitive information. There are still some issues with data collection however as some of the operators' internal systems are not always capable of extracting the data requested or do so in an incorrect fashion[3]. However, the process has become more automated by means of:

- Building relationships with the operators and the people directly involved in collecting the information. Both the ODTR and ComReg have met operators who have queries regarding the questionnaire, and a timetable is sent to the operators at the beginning of the year outlining dates on which the questionnaire is to be issued and returned as well as the date on which the quarterly report is due to be published.

- ComReg has held a number of workshops with both the fixed and mobile operators over the last three years to discuss and work through significant changes to the questionnaire. ComReg gives the operators a number of months' notice of any questionnaire changes it intends to make. ComReg has recently met with the following operators:
    - BT
    - Vodafone
    - 3 Ireland
    - Meteor
    - Eircom
    - Magnet
    - O2
    - UPC
    - ENet

- A number of industry workshops have also been held in the ComReg offices to elicit discussion and feedback on proposed changes to both the data collected and the ways in which this data is analysed in the Quarterly Key Data Report. These workshops included:
    - Workshop on leased line data collection – June 2008
    - Workshop on mobile data collection – February 2009
    - Workshop on fixed data collection – April 2009

[3] http://www.siliconrepublic.com/comms/item/17952-mobile-operator-3-fined-for

- A database was initially established in 2000 using Microsoft Access with links to data in Microsoft Excel to enable trend analysis and accuracy checks and also to facilitate the efficient extraction of various key indicators.

- In 2004, ComReg initiated a review of its statistical data collection and as part of this review a decision was made to seek a data warehouse solution via a competitive tender launched in November 2004. A preferred supplier, Solstone Plus[4], was chosen in early 2005 and the new warehouse (built on a SQL server) for the Quarterly Key Data Report and Market Analysis data went live in the second half of 2005.

- To improve data accuracy, in 2008 the Research Unit developed a series of business checks (for example around quarterly and annual variances in data), in conjunction with Solstone Plus, within the questionnaire and while this has helped the process, various checks still take place between ComReg and the operators once the data is submitted.

- The operators have approximately one month to complete the questionnaire and ComReg has 3-4 weeks to carry out the data analysis before the report is reviewed by ComReg senior management and then published. The period of time for analysis is dependent on how soon after the due date the questionnaire is submitted.

- A recent audit of ComReg's IT systems identified management information as one of the key strategic findings:

  "There are performance, flexibility and development issues relating to the reporting tool used…the process to generate quarterly industry reports is labour intensive and not delivered in an online, integrated manner. A rationalisation exercise needs to be performed to standardise and integrate as many of the ComReg data stores as possible into the data warehouse."

2.3 Issues with Quarterly Review data collection

While ComReg can never be absolutely certain of the accuracy of the data supplied by operators, the Research Unit has put in place checks and controls to ensure that the data collected is relevant, accurate and comprehensive. ComReg also relies on constant communications with operators to ensure that any issues that arise in the data collection process are quickly resolved.

Double-counting is also an issue that is particularly evident in certain segments of the questionnaire such as Internet subscriptions (in many cases subscribers can have more than one Internet account, with one or several ISPs) and leased line circuits. Due to these limitations, certain data is not made publicly available by ComReg.

[4] http://www.solstoneplus.com/

As not all of the data collected is published, ComReg must take account of a number of considerations in deciding what data is to be made publicly available:

- The number of operators in the market; given that there is only one very large player in the Irish cable market and only four main players in the Irish mobile market a lot of data is not published for confidentiality reasons.

- National legislation; ComReg is subject to the Freedom of Information Act[5] which provides the requester with an automatic right to request access to information not found in the public domain. The implication of this is that ComReg may be required to provide information requested unless it is deemed to be commercially sensitive by telecoms operators.

- Accuracy of the data; if ComReg is not confident that the data is accurate then it will not be made public. ComReg's statistical website, ComStat[6] was launched in 2008, making the underlying data behind the Quarterly Key Data Report available to the public, and ComReg must ensure that as well as having data accurate in reports, data must be correct when uploaded to the ComStat portal.

The Quarterly Key Data Report has continued to be published four times a year by the ODTR and its successor ComReg and it is one of the most popular documents available on the ComReg website, achieving much media coverage and average quarterly downloads of between 2,000 and 3,500. In order to keep the report relevant, ComReg remains flexible in terms of modifying the data and content to reflect the rapidly changing Irish telecommunications market. The table below highlights a number of key indicators currently collected in both the mobile and fixed line questionnaires.

10 Key Mobile Indicators	10 Key Fixed Line Indicators
2G and 3G subscriptions split by prepaid & postpaid and business & non-business customers	PSTN subscriptions and access lines split residential and non-residential
Number of mobiles ported (MNP) split by ports to specific operators	Number of bundled (double-, triple-, quad-play) subscriptions split residential and non-residential
Mobile broadband subscriptions split by prepaid & postpaid, business & non-business customers, and connection speeds	Fixed telephony retail traffic in minutes and sub-categorised, for example; local, national, premium rate, international

[5] The Freedom of Information Acts, 1997 and 2003 establish a number of important legal rights for those seeking access to official information. Statutory rights under the FOI Act include 1) a legal right for each person to access information held by public bodies; 2) a legal right for each person to have official information relating to him/herself amended where it is incomplete, incorrect or misleading; 3) a legal right to obtain reasons for decisions affecting oneself; 4) the FOI Act is designed to allow public access to information held by the Commission which is not routinely available through other sources. Access to information under FOI is subject to certain exemptions and involves specific procedures and time limits.

[6] http://www.ComStat.ie/

Average Revenue per User split by prepaid, postpaid and blended	Residential and non-residential fixed telephony retail revenues
Number of Retail Minutes in a number of sub-categories including; minutes to fixed lines, off-net minutes, international outgoing minutes	Narrowband internet subscriptions and revenues split by residential and non-residential customers
Retail revenues in a number of sub-categories including; domestic traffic revenues, retail roaming revenues, connection and rental revenues	Residential and non-residential broadband subscriptions across all available platforms and connection speeds
Volumes of SMS and MMS traffic, domestically and international roaming	Number of households passed for each individual broadband technology
Churn rates by individual operator	Number of local loops unbundled (LLU); line share and full LLU
Total value of tangible assets by mobile operators	Number of leased line circuits split by bandwidth and revenues accruing to each type
Number of full time employees directly attributable to the telecom sector	Television subscriptions and revenue split by cable, satellite and IPTV technologies

3 Market Analysis data collection

ComReg is charged with assessing the relevant electronic communications markets in Ireland. This process is based on a list of markets contained in the December 2007 Recommendation on Relevant Products and Service Markets[7]. ComReg is required to review the list of recommended markets to assess the level of competition particular to those markets in the Irish State and where applicable to those markets which were removed from the recommendation in 2007. Markets must be defined and analysed in accordance with the principles set out in the Recommendation and under the Framework Directive. Where ComReg finds that there is evidence of significant market power of one or more operator, remedies must be imposed in order to address the competition problem.

During the past three years ComReg has analysed, or is in the process of analysing, a number of markets[8] based on definitions by the European Commission in its Recommendation on Relevant Markets. The process of data collection for Market Analysis typically begins with a workshop with the main telecommunications operators and is followed up with questionnaires for data that ComReg has not already collected in its quarterly questionnaire or in surveys. Some operators may experience difficulties providing certain sets of data (particularly data disaggregated to a granular level; an example of which is provided in the Appendix) for the Market Analysis process as some data required might be business sensitive and cannot be disclosed while others can have problems with providing historical data, for a number of reasons, not least information systems-related. As Market Analysis is an iterative process, problems experienced and resolved in the procedure lead to improvements going forward.

As part of the Market Analysis process, surveys (both qualitative and quantitative) can be conducted in order to collect additional, attitudinal information from both consumers and businesses. It is necessary for ComReg to take into account end-user attitudes/behaviours (among both business users and private consumers) in relation to services provided in the relevant markets including how consumers behave at the retail level and whether there are any effective retail demand side substitutes for a service.

In its Market Analysis procedure ComReg seeks to determine various aspects of retail end-user behaviour in relation to, for example, their choice and use of mobile voice services and any characteristics of such services which distinguish them from other mobile, fixed or other electronic communication services. ComReg also seeks to understand consumer sensitivities to prices and how this impacts on their choice/use of services.

Once a satisfactory level of data has been collected, follow-up discussions and consultations are conducted with main suppliers and purchasers in the market. The

[7] http://eur-lex.europa.eu/LexUriServ/site/en/oj/2007/l_344/l_34420071228en00650069.pdf

[8] Including Wholesale Terminating Segments of Leased Lines [Market 6], Wholesale Physical Network Infrastructure Access (WPNIA) [Market 4], Wholesale Broadband Access [Market 5], and Wholesale Market for termination of voice calls on individual mobile networks (the Mobile Termination Market) [Market 7]

aims are to clarify and confirm data provided; to address any anomalies between demand and supply information; and to identify any qualitative issues which impact on the Market Analysis. Going forward, ComReg will continue to more closely link the Market Analysis and Quarterly Key Data Report data collection procedures in order to reduce burden on industry operators.

4 Additional data collection

ComReg's Research Unit commissions end-user surveys on a regular basis to supplement and complement primary data collection. Both residential and business users are surveyed on their access, usage and attitudes to communications service such as fixed voice service, narrowband and broadband internet access, mobile voice and data and postal services. An example of the collected data is provided in the Appendix. The residential consumer surveys are typically based on a nationally representative sample of approximately 1,000 persons aged 15 to 74. The surveys ask consumers about their awareness and usage of ICT services and are conducted via face to face in-home interviewing. The accuracy of these surveys is typically estimated to be +/-3%. Data is weighted in order to reflect the demographic profile of the adult population in the Republic of Ireland, based on the most recent data available from the CSO.

The business user surveys are typically telephone interviews among a sample of approximately 500 Small to Medium-sized Enterprises (SME) and 50 corporate businesses. SMEs are defined by ComReg as companies with less than 100 employees. Large corporates are defined by ComReg as companies employing at least 100 employees. Quota controls are set for company size based on the total number of employees. Representative quota controls are also set for industry sector. The margin of error is typically estimated to be +/-4%. ComReg is currently in the tendering stage of changing its survey procedure and will no longer issue quarterly surveys. Instead ComReg will produce a number of regular trackers for certain key metrics on the communications market aswell as in-depth one-off pieces of qualitative research (for example on the Premium Rate Services industry and international roaming).

Over the last few years, ComReg's Research Unit has also purchased various data and analysis services from telecoms consultants and data providers (such as Teligen and Cullen International among others) to provide research and data, which allows ComReg to benchmark the Irish telecommunications market against other markets primarily, but not exclusively, in the European Union. In addition there is a need for wider research to ensure that the regulator understands the key economic, technical and commercial trends and the appropriate regulatory and legal response to such trends. Statistical data such as mobile and fixed voice subscribers, traffic volumes, mobile and fixed broadband subscribers, data on tariffs or pricing for specific telecommunications services, penetration data at household and per capita levels is provided by the telecoms consultants and data providers and this data is used by ComReg both for internal benchmarking and analysis, as well as for use in reports such as the Quarterly Key Data Report.

Regulatory data is also purchased such as news updates as well as more in-depth analysis of initiatives at a pan-European level, national level (information on work by particular National Regulatory Authorities), and globally (both by individual countries outside the EU and bodies such as the International Telecommunications Union (ITU)). Examples include information and analysis of public funding of next-generation broadband in EU countries, a look at how rules and processes for mobile

number portability have been created by other regulators and what Market Reviews have been completed by NRAs.

All of this information is required by ComReg for analysis of best practice with regard to regulation of electronic communications markets as well as to provide current awareness to ComReg staff of developments with regard to regulation at both a national and an international level. It is one of the tasks of the Research Unit to keep ComReg staff members abreast of this type of information aswell as being the "gatekeeper" to vendor websites, reports, and conferences etc.

5 Data analysis

5.1 Research Unit analytical process

The data that ComReg collects from telecoms operators in the Irish market is verified and queried rigorously, given specific time constraints. There are initial variance checks built into the questionnaire which allows the operator to sense-check its own data before submitting the questionnaire to ComReg by means of a secure-upload facility[9].

Once ComReg's Research Unit has received all questionnaires, reviewed and verified any anomalies in terms of movements outside of parameters specific to individual metrics or issues with the data, the Research Unit analysts can produce the Quarterly Key Data Report. Primarily the report focuses on quarterly and annual trends in the fixed line, mobile, internet and broadcasting markets. This is achieved through chart and text based analysis, examples of which are provided in the Appendix.

Any data provided by third party sources is verified by means of discussion with the analysts from the consultant or provider that compiled the information. Similar to the information that ComReg collects from operators in the Irish market, analysis is primarily chart-based with factual text added for commentary purposes.

For ComReg's residential and business surveys, the market research company that is commissioned to conduct the survey will be in close liaison with ComReg's Research Unit during the data collection period and will keep ComReg updated as the quotas in the survey are completed. Initially ComReg's Research Unit is provided with headline figures for review and is in constant communication with the research agency as the analysis and presentation is completed. ComReg is then provided with all background data in both Excel and SPSS[10] (Statistical Package for Social Sciences) format. This allows ComReg to conduct additional statistical analysis (demographics for example) for both internal and external stakeholders.

Ad hoc analysis and research conducted by the ComReg Research Unit using data collected across a number of sources (quarterly key data, survey data, third party data) can be produced with Excel, SPSS or Stata[11] for additional, robust econometric evidence. The Research Unit has recently conducted econometric analysis in the following areas and an example of this ad hoc research is available in the Appendix:

- Quantifying the ex-post benefits of regulation as part of an overall paper "Measuring ComReg's Economic and Social Contribution"
- An analysis of competition and investment in the European Telecommunications Market
- The effect of regulation on fixed and mobile telecommunications prices

[9] http://www.comreg.ie/_secure/home/default.asp

[10] http://www.spss.com/

[11] http://www.stata.com/

5.2 Future of data analysis process

In order to enhance ComReg's role as a key information and data source for the communications sector and the expert agency with regard to statistical data on the Irish communications sector, as well promoting ComReg internally as a Centre of Excellence which enables smarter working, a new data warehousing and reporting tool has been proposed. This would in effect be a multi-purpose Management Information System (MIS) providing a full set of metrics to ComReg management and staff. However, while there would be undoubted benefits to adoption of a new MIS, there are several barriers such as cost, complexity and level of existing in-house IT resources.

Migration to a new MIS would also allow additional data sets to be integrated with Quarterly Key Data Report statistics. This in turn would reduce the unit costs as the total cost of the data warehouse could be spread over a wider pool of users.

A fully automated warehousing and reporting system can provide specific views of data across the organisation and allow staff to generate a range of reports on demand. For example, a short summary report could be generated ahead of the publication of the Quarterly Key Data Report with key statistics for use in external and internal meeting and presentations. Responses to the various questionnaires received from organisations such as the European Commission, European Competitive Telecommunications Association (ECTA)[12], and the OECD would be quicker and less burdensome as template reports could be set up based on these standard questionnaires.

The adoption of an industry standard tool (rather than a bespoke in-house solution) would allow ComReg to benefit from a structured programme of software enhancements and development, as well as benefitting from interaction with users of such software in other public and private sector organisations.

[12] http://www.ectaportal.com/en/

6 Data publication & dissemination

6.1 Publication

The Quarterly Key Data Report is one of ComReg's key publications and is published in order to both understand current trends in the Irish communications market and inform external users. It is released on a quarterly basis with a three month lag, i.e. data as of June is published in September, data as of September published in December, and so forth[13]. In the case where erroneous data is published in the Quarterly Report, ComReg will subsequently publish an information notice[14] on its website indicating the error and highlighting what action will be taken. Typically the error is corrected and amended in the following Quarterly Key Data Report.

ComReg surveys are published in full on the ComReg website with accompanying analysis by ComReg. In 2009/2010 ComReg published the following survey-based studies among others:

- ComReg Residential ICT Services Survey H1 2010[15], which asked consumers about their awareness and usage of ICT services (July 2010)
- ComReg Business ICT Services Survey H1 2010[16]. The main purpose of the research is to gain an in-depth understanding of current usage of and attitudes to information and communication technology (ICT) among a representative sample of Irish SMEs and large Corporate businesses.
- Residential and Business Internet Connectivity - Irish and European experience[17]
- ComReg Business ICT Services Survey Wave 1, 2009 - Millward Brown IMS[18]

In 2011 ComReg's Research Unit intends to focus its survey requirements on tracking key indicators of the Irish ICT market. This will free up valuable resources and allow other areas of ComReg, including Market Analysis, to conduct detailed surveys more tailored to their needs.

ComReg also makes available on its website some external conference presentations given by its staff. A wide variety of publications including media releases, consultations and responses, decision notices and annual reports are also made available on ComReg's website[19], all of which use data gathered by the Research Unit and/or other teams within ComReg.

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[13] http://www.comreg.ie/publications/quarterly_key_data_report_q2_2010.597.103704.p.html

[14] http://www.comreg.ie/_fileupload/publications/ComReg0923.pdf

[15] http://www.comreg.ie/_fileupload/publications/ComReg_1062r.pdf

[16] http://www.comreg.ie/publications/comreg_business_ict_services_survey_h1_2010.597.103614.p.html

[17] http://www.comreg.ie/_fileupload/publications/ComReg0984.pdf

[18] http://www.comreg.ie/_fileupload/publications/ComReg0948.pdf

[19] http://www.comreg.ie/publications/latest_publications.597.0.0.2010.p.html

6.2 Dissemination

As well as the publication of data in official documents, ComReg also makes data available on its statistical website, ComStat[20]. ComStat was developed in order to act as a central portal for presentation of statistical data and analytical research on the electronic communications market and to facilitate personalised downloads of statistics. In order to publish this data to the internet, ComReg uses PX-Make[21] software, which was developed in Denmark, to create files by entering metadata and adding data from, for instance, an Excel file.

The information and statistics stored on the website are derived from a variety of sources, but are mostly reliant on data obtained from authorised electronic communications operators, as well as surveys of consumers commissioned by ComReg, and data from organisations such as the Central Statistics Office and the European Commission.

There is a two-way information link between ComReg and these domestic and international institutions. ComReg both supplies and consumes data from organisations such as the ITU, ECTA and the OECD. Data is shared with academic institutions both domestically and internationally and ComReg has recently put in place a research agreement with the Economic and Social Research Institute (ESRI).

Consumers of ComReg's data include operators, financial analysts, journalists, and academics. All of these users look to ComReg to provide additional commentary on the telecommunications market. Data and analysis supplied by ComReg are used in reports published by government departments and agencies, allowing ComReg to feed into government policy, which is essential given the emphasis the Irish government has placed on the "Smart Economy" in order to help the country out of the recent recession[22].

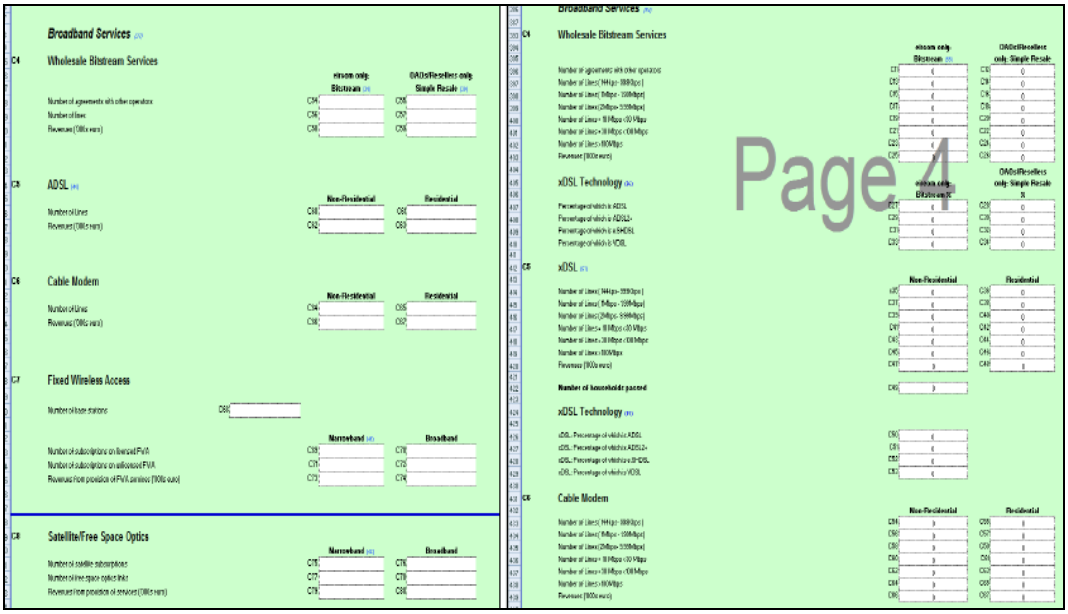
[20] http://www.ComStat.ie/

[21] http://www.dst.dk/pxmake.aspx

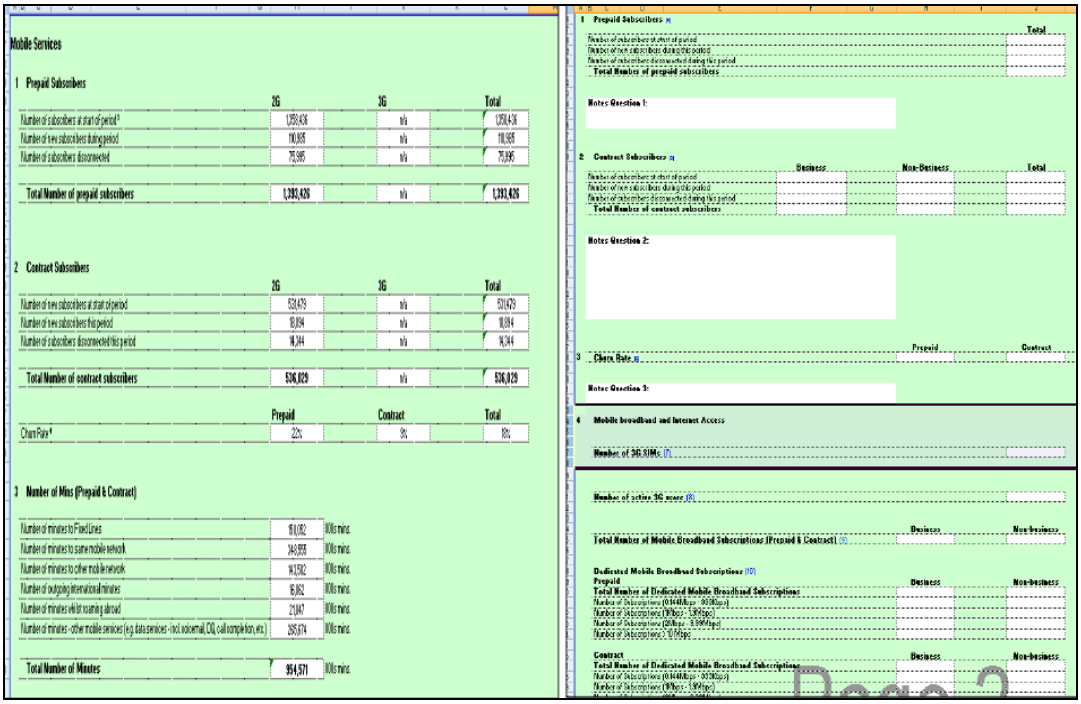
[22] http://www.taoiseach.gov.ie/attached_files/BuildingIrelandsSmartEconomy.pdf

Appendix – Examples of ComReg's data collection & analysis

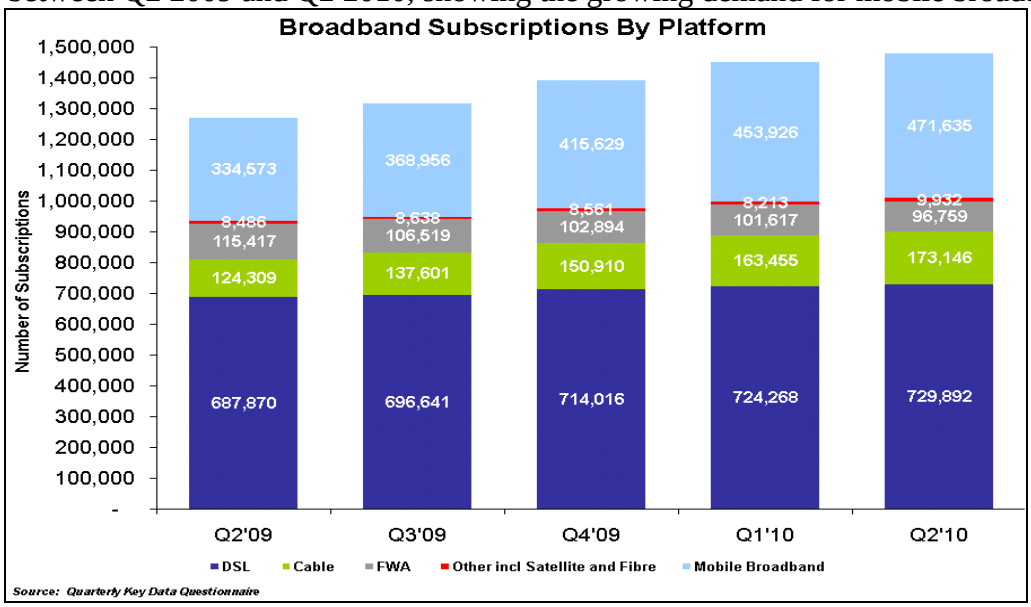
2005 (left hand side) and 2010 (right hand side) versions of the Quarterly Key Data Report fixed questionnaire; fixed broadband section. It's clear that the emphasis has shifted from subscriptions to speed categories.



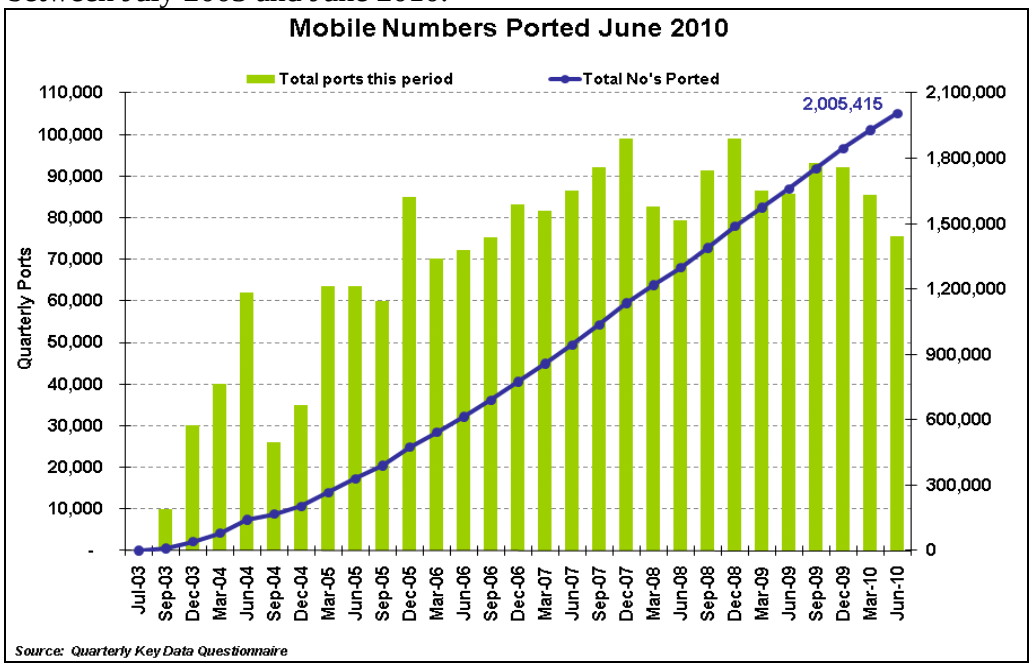
2005 (left hand side) and 2010 (right hand side) versions of the Quarterly Key Data Report mobile questionnaire; mobile subscriptions section, including mobile broadband in the 2010 version.



A graphical analysis of the quarter on quarter growth in broadband split by platform between Q2 2009 and Q2 2010, showing the growing demand for mobile broadband.



A graphical analysis of the quarter on quarter change in mobile numbers ported between July 2003 and June 2010.



Part of the questionnaire submitted to operators for a 2006 Market Analysis on the interconnection market, showing the detailed level of data required.

OAO

We accept that not all entries will be relevant to all operators
Where you are unable to break traffic down to the precise level (and/or the result would be immaterial), leave it aggregated at a higher level
All traffic should be accounted for, but only once in each of Origination, Termination and Transit

			2004				2005			
			H1		H2		H1		H2	
#	Item		Minutes	Revenue	Minutes	Revenue	Minutes	Revenue	Minutes	R
	Origination									
	Origination (originated means from an end customer phone directly connected to that primary									
1	**switch, including via a concentrator)**	= [2] + [5]								
2	**Self-provided (you own the infrastructure and have the retail relationship with the call origin**	= [3] + [4]								
3	All minutes that originated and terminated at the same primary switch without involving any other switches									
4	All other originated minutes where you have the retail relationship with the call originator									
5	**Non-self-provided**	= [6]								
6	All originated minutes where a different operator has the retail relationship with the call originator (CPS/WLR)									
	Termination									
	Termination (terminated means to an end customer phone directly connected to that primary									
7	**switch, including via a concentrator)**	= [8] + [11]								
8	**Self-provided (There is no wholesale transaction involved)**	= [9] + [10]								
9	All minutes that originated and terminated at the same primary switch without involving any other switches									
10	All other terminated minutes where there is no wholesale transaction involved									
11	**Non-self-provided**	= [12]								
12	All terminated minutes where there is a wholesale transaction involved									
	Transit									
13	**Non-switched transit conveyance**	= [14] + [15] + [16]								
14	All minutes that originated at one of your primary switches, and terminated at another directly connected primary switch of yours									
15	All minutes that originated at one of your primary switches, and terminated at another directly connected primary switch belonging to a different operator									
16	All minutes that terminated at one of your primary switches, and originated at another directly connected primary switch belonging to a different operator									
17	**Switched transit (minutes passing through at least one of your switches acting as a transit switc**	= [26] + [23]								
18	**Origination and termination fully on-net**	= [27] + [28]								
19	All **geographic number** minutes that originated at one of your primary switches, passed through one or more transit switches of yours, and then terminated at another primary switch of yours, where the call did not leave your network									
20	All **non-geographic number** minutes that originated at one of your primary switches, passed through one or more transit switches of yours, and then terminated at another primary switch of yours, where the call did not leave your network									
21	**Origination and termination either partially or fully off-net**	= Sum ([22] : [40])								
	Geographic number called, terminated at your primary switch									
22	All minutes received from a switch of a different fixed operator									
23	All minutes received from an international gateway switch									
24	All minutes received from a mobile operator									
	Geographic number called, terminated at the switch of a different operator									
25	All minutes that originated at one of your primary switches									
26	All minutes received from an international gateway switch									
27	All minutes received from a switch of a different fixed operator									
28	All minutes received from a mobile operator									
	Mobile number called									
29	All minutes that originated at one of your primary switches									
30	All minutes received from an international gateway switch									
31	All minutes received from a switch of a different fixed operator									
32	All minutes received from a mobile operator									
	International number called									
33	All minutes that originated at one of your primary switches									
34	All minutes received from a switch of a different fixed operator									
35	All minutes received from a mobile operator									
	Non-geographic number called									
36	All minutes that originated at one of your primary switches									

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A sample of the results of a 2009 business survey, showing the depth of analysis in terms of industry type, number of employees etc.

#page
MILLWARD-BROWN-LANSDOWNE
-4.1E+07
(COMREG ICT)
Table 6
Q.4 What are your reasons for choosing your main fixed line supplier for your business?
FIELDWORK : (OCTOBER) 2009
MILLWARD BROWN LANSDOWNE

		TYPE		CO. SIZE					SECTOR LEADS												REGI
	Base (wt)	SME	CORPORA	1-9	10-49	50-100	101-300	301+	Agriculture	Mining	Manufactu	Transport	Recycling	Wholesale	Retail	Hotels - R	Finance	Services	Governmer	Dubl
Base (nw)	543	480	63	202	195	83	31	32	20	53	92	41	1	46	44	35	112	87	12	
Base (wt)	541	494	47	201	196	97	23	24	31	58	77	33	6	39	39	32	77	122	28	
Effective E	468	416	58	167	176	74	29	30	20	53	90	41	1	45	44	34	111	86	12	
They offer	229	207	22	76	84	47	11	11	9	16	40	10	6	20	20	9	35	51	12	
	42	42	47	38	43	49	49	45	29	28	52	32	100	52	52	28	45	42	42	
The range	42	37	5	14	12	11	2	3	2	5	7	2	0	6	2	4	7	8	0	
	8	7	11	7	6	11	8	15	5	8	9	6	-	15	5	13	9	7	-	
Good custo	38	34	4	8	11	14	1	3	0	7	6	1	0	3	2	1	8	8	2	
	7	7	9	4	6	15	6	11	-	13	7	4	-	9	5	3	10	6	8	
Previous n	26	26	0	6	12	8	0	0	2	2	5	2	0	2	1	0	1	7	3	
	5	5	-	3	6	8	-	-	6	4	7	7	-	5	2	-	2	6	9	
To get a s	8	8	0	2	5	0	0	0	0	0	2	0	0	0	0	1	1	1	2	
	1	2	-	1	3	-	-	-	-	-	2	-	-	-	-	3	2	1	8	
Have alwa	220	201	19	102	74	25	6	12	17	30	26	14	6	10	15	15	36	45	6	
	41	41	40	50	38	26	28	51	55	51	34	41	100	26	39	48	47	37	24	
Other (ple	13	11	2	4	3	5	1	1	0	3	0	3	0	1	1	1	2	2	0	
	2	2	4	2	2	5	5	3	-	4	-	10	-	2	3	3	3	2	-	
Don't know	23	21	2	9	6	6	2	0	3	0	5	2	0	2	1	1	2	1	7	
	4	4	5	4	3	6	10	-	10	-	6	5	-	4	2	3	3	1	26	
Eircom ow	9	9	0	5	4	0	0	0	0	1	0	2	0	1	0	0	1	4	0	

A sample of the results of a 2010 residential survey, showing the depth of analysis in terms of gender, location and social type etc.

91	Dont Know	8	3	4	3	1	3	0	3	0	4	0	1	0	3	0	7	0	8	4
92		3%	4%	2%	3%	5%	2%	-	2%	-	2%	-	8%	-	2%	-	2%	-	3%	2%
93	#page																			
94	MILLWARD BROWN LANSDOWNE																			
95	41109922																			
96	COMREG CONSUMER ICT SURVEY																			
97	Table 3																			
98	Q.3 WHICH, OF THE FOLLOWING COMPANIES DO YOU USE FOR YOUR RESIDENTIAL PHONE SERVICE?																			
99	BASE: All fixed line phone owners																			
00	FIELDWORK : JUNE 2010																			
01	MILLWARD BROWN LANSDOWNE																			
02																				
03																				
04			SEX		AGE						SOCIAL CLASS							REGION		
05																				
06		Base (wt)	MALE	FEMALE	15-17	18-24	25-34	35-49	50-64	65-74	AB	C1	C2	DE	F	ABC1	C2DE	DUBLIN	RESTOFIL	MUNSTER
07																				
08	Base (nw)	722	349	373	25	72	120	236	202	67	127	246	183	111	55	373	294	233	179	182
09	Base (wt)	707	345	362	32	91	107	215	180	82	119	201	180	135	72	320	315	219	175	188
10	Effective E	669	334	335	25	70	113	229	198	56	123	238	173	104	51	360	275	219	165	166
11																				
12																				
13	Eircom	455	220	236	17	60	69	130	122	57	77	117	120	88	53	195	208	131	120	122
14		64%	64%	65%	54%	66%	64%	60%	68%	69%	65%	58%	66%	65%	73%	61%	66%	60%	69%	65%
15	BT Ireland	27	17	10	3	4	5	8	6	1	5	10	6	5	2	15	11	9	5	2
16		4%	5%	3%	9%	4%	4%	4%	3%	1%	4%	5%	3%	4%	2%	5%	3%	4%	3%	1%
17	Euphony	4	2	3	0	0	0	2	0	3	1	0	1	0	3	1	1	0	0	3
18		1%	1%	1%	-	-	-	1%	-	3%	1%	-	1%	-	4%	0	0	-	-	1%
19	Talk Talk (	8	5	3	0	0	1	2	4	2	2	1	2	2	2	2	4	2	4	1
20		1%	2%	1%	-	-	1%	1%	2%	2%	1%	0	1%	2%	2%	1%	1%	1%	2%	0
21	Chorus/UP	59	36	24	2	6	13	22	12	4	8	21	17	13	0	29	30	36	8	12
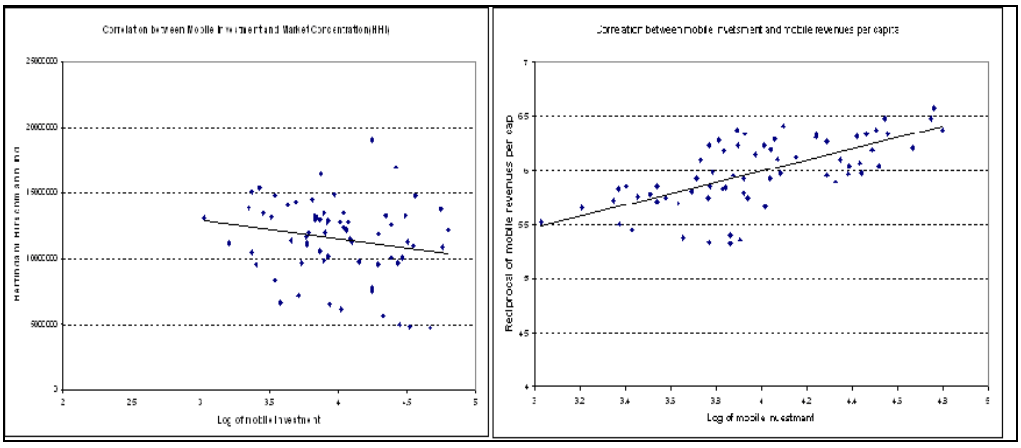
Illustration of positive and negative correlations between mobile investment and two independent variables.