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Commission for Communications Regulation

Broadband Market in Ireland

Presentation to Joint Oireachtas Committee on Communications, Marine and Natural Resources

ICT sub-Committee

24th June 2003.

Broadband Market in Ireland

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- *Legislative Framework*

Section 2:
- *Current State of Play*

Section 3:
- *Supply*

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Key EU and National Regulatory Objectives

1. Promote competition in the provision of electronic communications networks & services

2. Contribute to the development of the EU internal market

3. Promote the interests of consumers including a high level of protection for consumers

Changing EU Regulatory Framework

- New Regulatory Framework from July 25th 2003
- Fewer Directives – 5 rather than 22
- Rely where possible on voluntary action by market players, but grant regulatory authorities strong power to intervene when justified
- Regulate markets, not technology
- Greater reliance on Competition law, link the threshold for regulation to competition law concept of dominance
- Increased interaction with other international regulatory authorities, Competition Authority and EU Commission.

National Broadband Objective

"The Commission shall, in the exercise of its functions, take into account the national objective regarding broadband rollout, viz, the Government wishes to ensure the widespread availability of open-access, affordable, always on broadband infrastructure and services for businesses and citizens on a balanced regional basis within three years, on the basis of utilisation of a range of existing and emerging technologies and broadband speeds appropriate to specific categories of service and customers."

Ministerial Policy Direction - January 2003

Key Relationships in Legislative Framework

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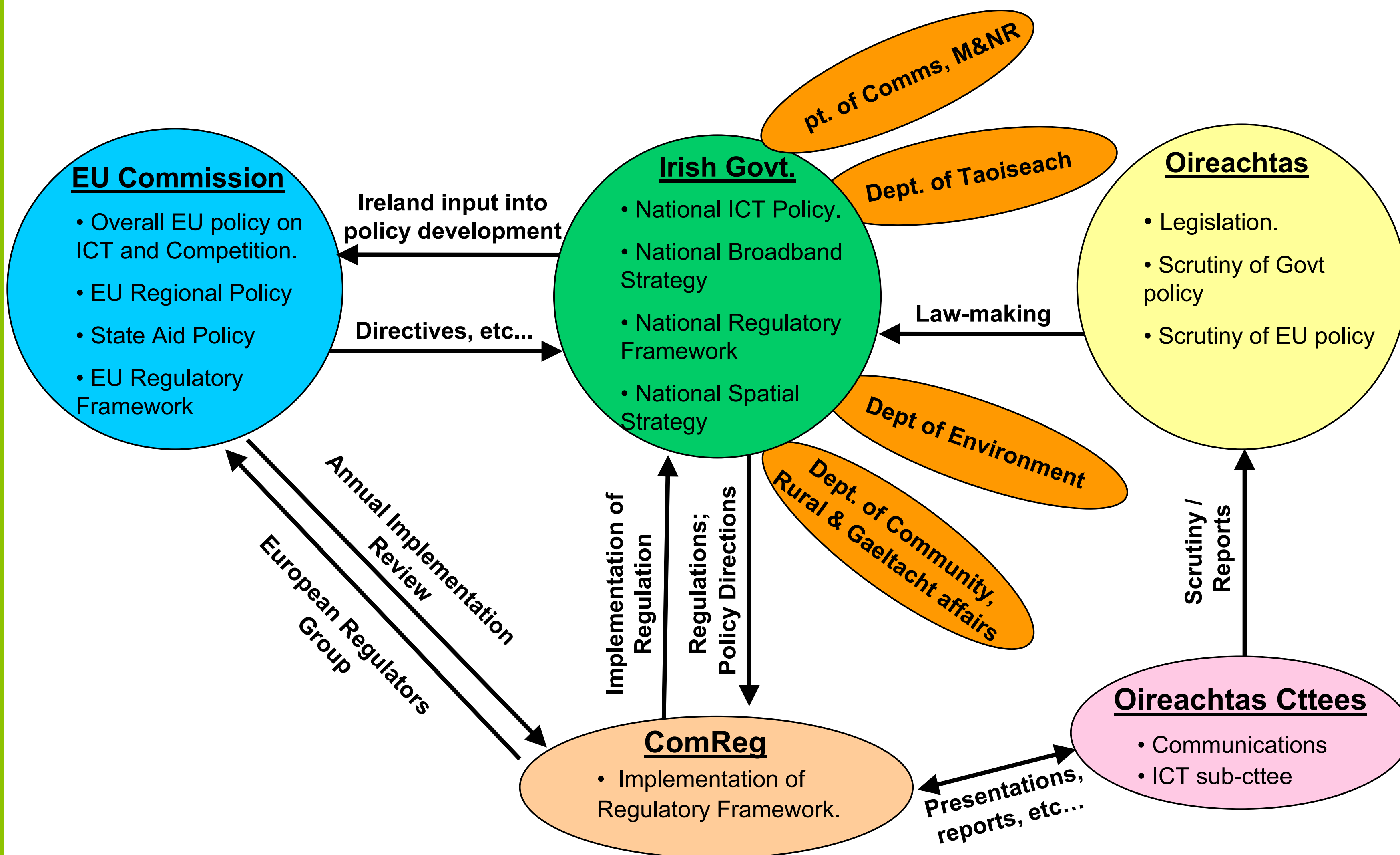

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Considerable Progress since Liberalisation, but Market has Stabilised since Economic Slowdown

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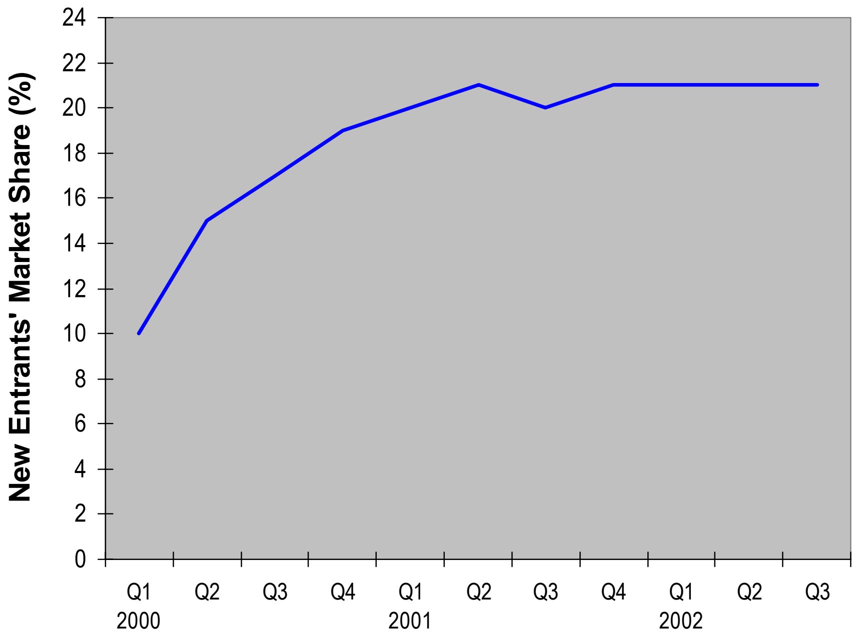
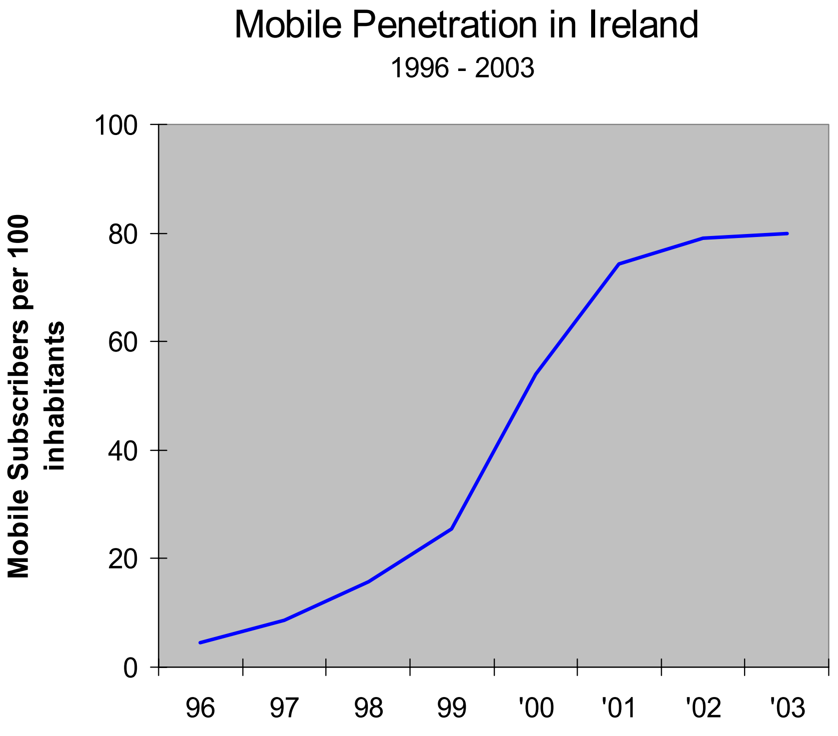
- New entrants' market share of the fixed line market has been relatively static since Q1 2001.
- Since 2001 major fixed infrastructure roll-outs have been limited (mostly *eircom*, EsatBT).
- Some movement in and out of the market, but more noticeable is the overall drop in the marketing of services.

New Entrants' Share of the Fixed Line Market by Revenues: 2000 - 2002



Mobile Market – Rapid Subscriber Growth

- Approximately 3.1m subscribers / 80% penetration
- Emergence of competitors to eircell/Vodafone
  - Vodafone (56%); 0_2 (40%); Meteor (4%). Hutchison Whampoa to enter.
- Huge growth in text messaging
  - 2000: 1.1bn; Monthly average of 24 SMS per user.
  - 2003: 3bn; Monthly average of 72 SMS per user.
- 3G licences



Broadband – Total Connections estimated at approx. 12,000

- ***Leased Lines*** provide a business solution and are generally available nationwide
  - Approx. 22,000 retail leased lines, although only about 5% of these were above 2Mbit
- ***DSL*** coverage increasing but take-up limited (figures as at June 2003).
  - Approx.50% of all lines in Ireland are DSL enabled;
  - Exchanges enabled: *eircom* 70 (Jan '03) →110 (Dec '03); Esat BT - 38.
  - Total DSL lines installed: approx 3,800
- ***Cable*** modem take-up limited by network roll-outs (figures as at June 2003).
  - Total cable modem subscribers: 3,000 (incl. ntl, Casey Cablevision and Chorus) – increase of 30% since last quarter
- ***Wireless*** solutions are still emerging
  - Fixed Wireless Access – approx 5,300 residential and business; also Wireless-Lan
  - Satellite – vsat connections useful in rural areas
  - 2.5G available, 3G services to be rolled out by the end of the year

Sources: ComReg, Quarterly Key Market Data, June 2003.

Significant residential take-up is required to move up table, but SME take-up is more important for jobs and growth

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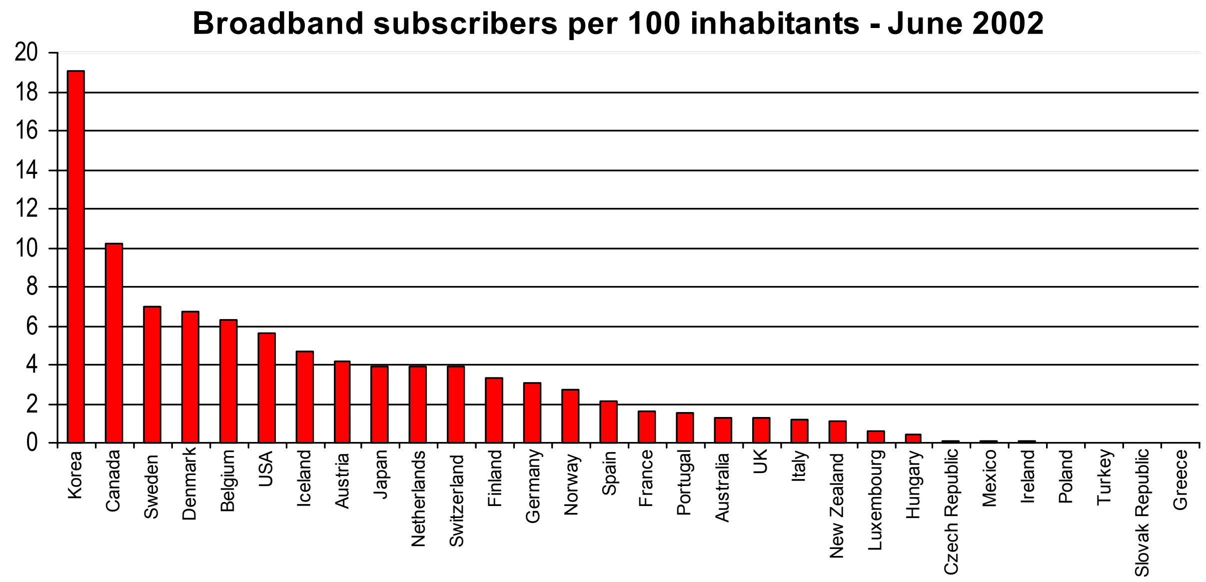
- OECD rankings: 26th out of 30
- 89,000 SMEs in the country[1] – 90% with less than 10 employees
- In 2002, cable modem + DSL = 85% of broadband access across all OECD countries
- Wireless plays small role



- In Ireland, cable not significant in short term - but almost half of all telephone lines are DSL enabled
- Combination of affordable pricing and innovative marketing needed to drive mass take-up

[1] TNS MRBI estimate – June 2003.
Sources: OECD Communications Outlook 2003.

After a slow start, DSL <u>availability</u> is improving steadily

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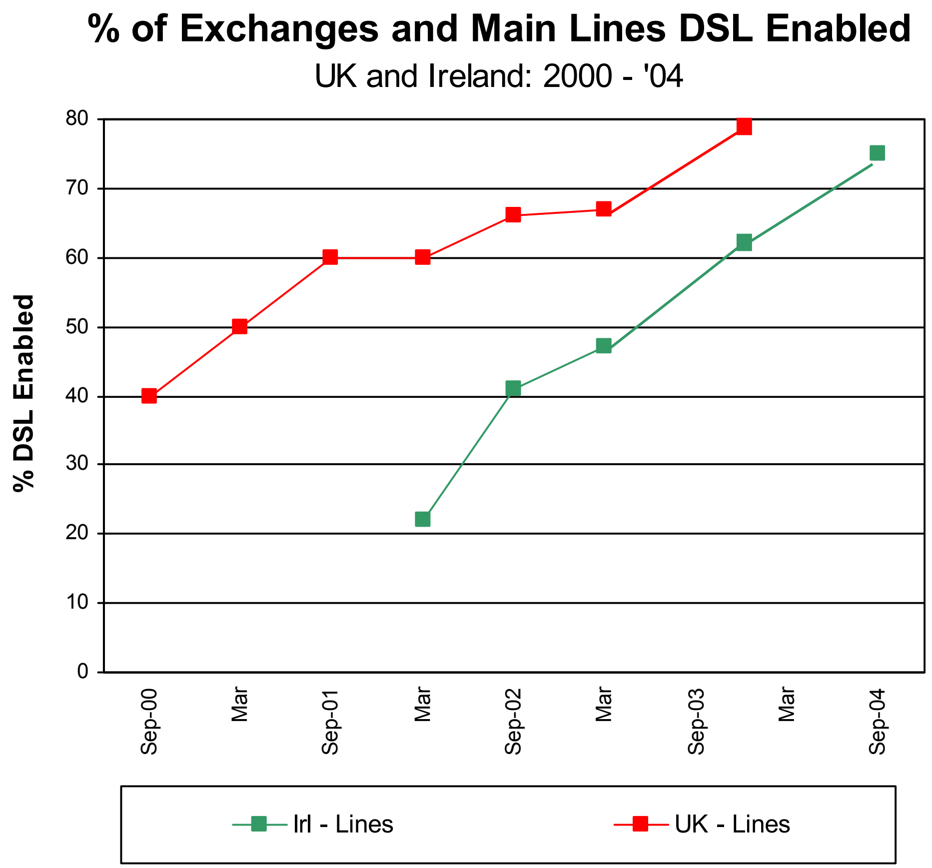


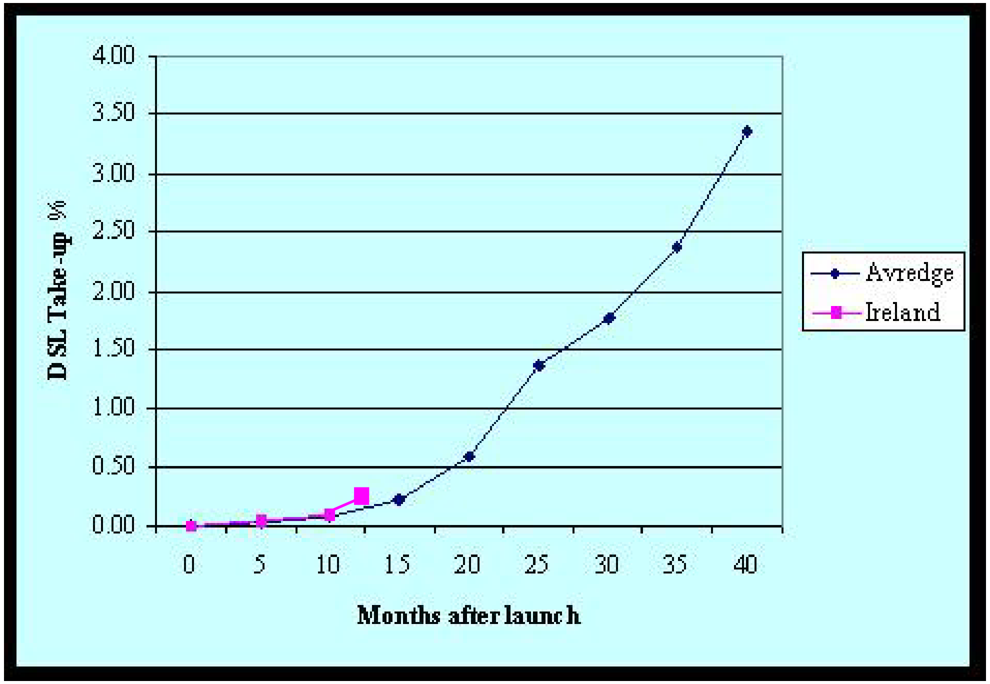
- Almost 800,000 out of 1.6m lines are DSL enabled.
- The gap between Ireland and other countries is closing. If both BT and *eircom* adhere to their planned roll-outs, the gap between the UK and Ireland could be halved within 12 months.
  - By Sept ’04 eircom plan to have every exchange with over 2,000 lines enabled.

NB: Percentage figures based on ComReg estimate of 1000 *eircom* exchanges and 1.6m main lines and Oftel estimate of 5,600 BT exchanges and 28.9m main lines.

Sources: Oftel: Internet and Broadband Brief March 2003, DSL Fact Sheet June 2003. BT Press Release 9th June 2003. *eircom* Press Releases 23rd Jan and 23rd April ‘03. Esat BT Web-site

Early DSL take-up has been slow, although this has been the experience internationally.

Norcontel: Adoption Curve for DSL Take-up



Source: Norcontel, Broadband Telecommunications in Ireland – Benchmark Study, Update Report March 2003.

NB: The benchmark is based on the average growth curves of five top countries rebased to a common starting point, and plots the growth of DSL in Ireland relative to that curve

- By end March 03, there were some 3,850 installed DSL subscribers in Ireland. This equates to a penetration rate of ≈ 0.25%.
- With price cuts of approx. 50% taking effect from April, there has been a steady increase in demand.
- However, many of these subscribers are still business customers[1]. Smaller budgets and lower awareness of the benefits of broadband are constraining wider consumer take-up.
- Internationally, lower prices supported by full marketing campaigns have been instrumental in boosting consumer broadband take-up.

[1] As at March 2003, over two thirds of all DSL subscribers were business customers.
Sources: Norcontel Report for Forfas, March 2003; ComReg, Quarterly Key Data - June 2003.

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A whole range of broadband access technologies are potentially possible…

	Advantages	Disadvantages
DSL	- Uses existing copper infrastructure. - Can be rolled out incrementally. - Well established and understood technology. - Dedicated local loop line per user.	- Availability depends on length and condition of line. - Up-grade costs in exchanges can be high.
Cable	- Operators have extensive experience with video. - Can use some existing infrastructure.	- Expensive to upgrade. - Shared medium with contended bandwidths: Up-link capacity can be limited.
Satellite	- Nationwide availability; good for broadcast. - Backhaul infrastructure not needed. - Low installation and set-up time (once satellite is operational).	- Latency and delay issues (poor for interactivity / real-time voice and video services) - Limited dedicated capacity per user - Cost and time taken to launch a new satellite can be prohibitive
FWA	- Rapid roll-out - Avoids digging costs	- Some systems need line of sight which may require high antenna towers; - Customer premise equipment may be expensive.
Mobile / 3G	- Technology that consumers use most and are most familiar with. - Additional functionality of broadband 'on the move'	- Problems with battery life and handset availability. - Small screen may make it suitable only for certain types of services and content.
Optical Access	- High capacity - Future proof long term solution - Wireless Optical avoids digging	- Digging costs can be high where new cable must be installed, but rapid innovations are bringing equipment costs down.

… providing for a variety of download speeds.

Access Method	Time Taken	
	60 Page Document (450 kBytes)	24 Colour photos (15 Mbytes)
Dial-up Modem (56kbit/s)	60 sec	36 mins
ISDN (128kbit/s)	28 sec	15 ½ mins
Cable Modem (512kbit/s)	7 sec	4 mins
Leased Line / DSL(2Mbit/s)	1.8 sec	1 min
VDSL (52 Mbit/s)	70 mSec	2.3 sec
Optical Access (100Mbit/s)	36 mSec	1.2 Sec
Optical Access (1Gbit/s)	4 mSec	120 mSec

In other countries competition between alternate networks was a key factor in spurring network roll-outs.

- Broadband Penetration highest in cabled Central European countries (Sweden, Belgium, Netherlands, Austria, Denmark, Switzerland)
- Germany is the main exception – Deutsche Telekom ownership of cable assets (also the case in Portugal)
- Some larger countries where the incumbent was slow to react to the threat from cable operators, broadband is now beginning to take-off (e.g. UK, Spain, France)
- Smaller peripheral markets still show little evidence of much inter-network competition (Portugal, Finland, Ireland)
- Missed out on the short window of opportunity for investment between liberalisation of markets (‘98) and slow-down in capital markets (‘01)???

Market Dynamics – Characteristics of players in Irish broadband market

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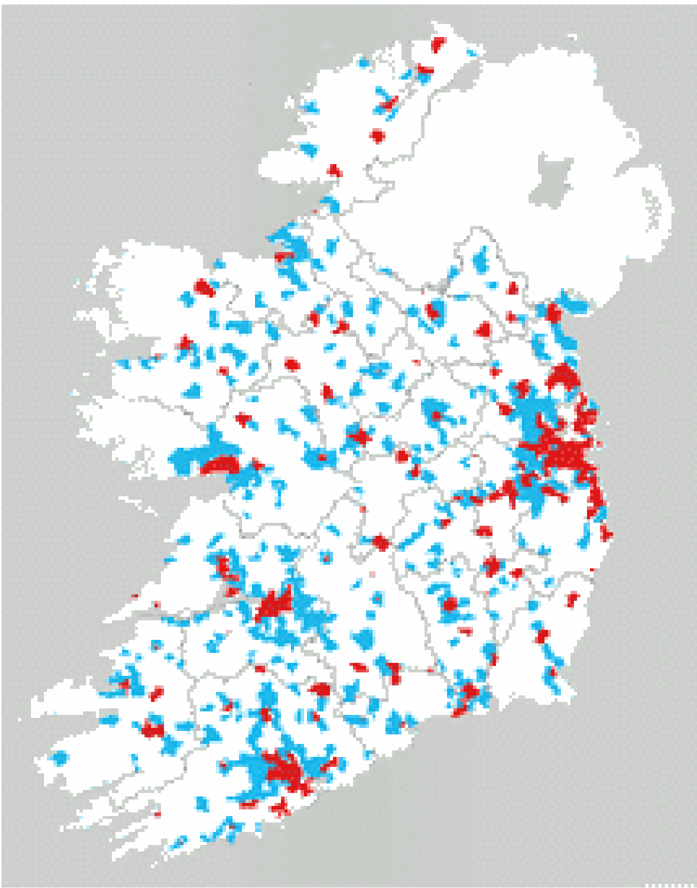
Grouping	Characteristics	Current Strategic Focus	Example
Incumbent	Large customer bases (Bus & Res); Owns the bulk of the fixed-line infrastructure	Strongly focused upon maximising value from existing investments (i.e. existing copper technologies - xDSL).	*eircom*;
Alternative Fixed Line Operators	Irish subsidiaries of global telecom players; Apart from Esat BT, most Altnets only target high-tech MNCs & top-end of the business market.	Some fibre infrastructure in Dublin; Constrained funding environment; High degree of focus on maximising free cash flow.	EsatBT, MCI WorldCom; Nevada Tele.com; COLT, etc.
Mobile Operators	3m subscribers; 3,000+ masts	Focused on increasing ARPUs through higher-value services (3G).	Vodafone; Meteor; O_2; (Hutchison - 3G)
Cable Operators	Large TV distribution networks (500,000+ cabled households; some MMDS in rural areas)	Constrained funding environment limiting network upgrades; Concentrating on digital TV roll-outs	ntl Chorus
Others	Smaller niche players in Fixed Wireless/Satellite/WLAN markets	Developing business case	Irish Broadband; Leap.

Ireland's highly-dispersed population presents a challenge – Govt. assistance given to regions to counterbalance.



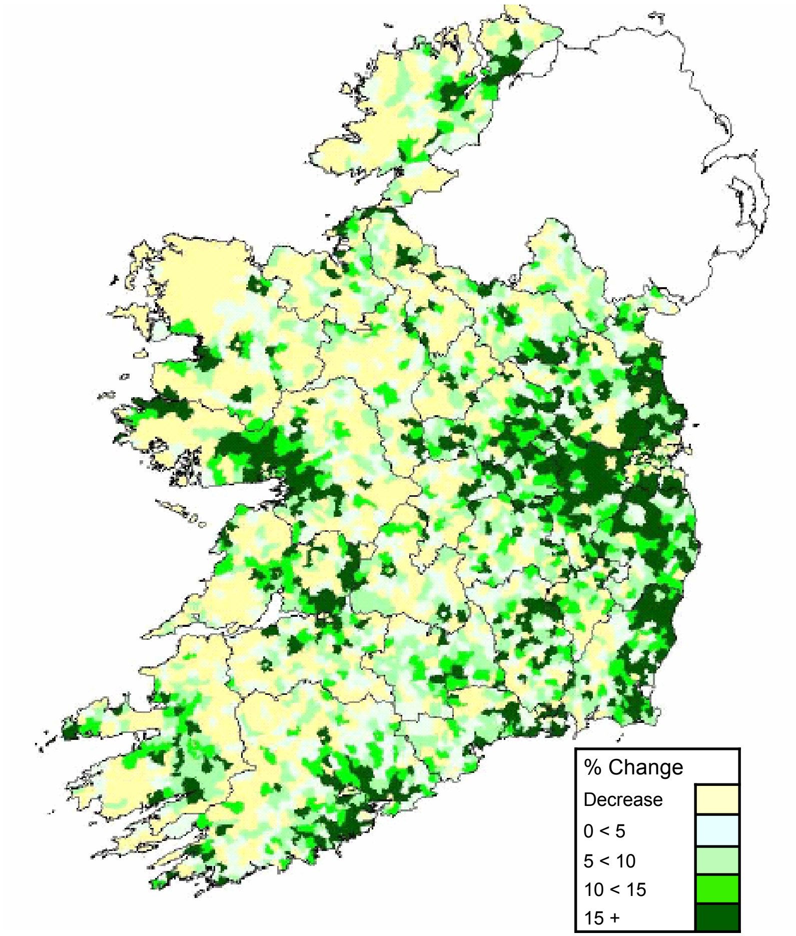
- Historically, Ireland's population has been very dispersed, although there has been a long-term trend towards urbanisation.
  - Approx. 30% of pop. in Dublin region
  - Approx. 20% of pop. in major towns
  - Approx. 50% of pop. in rural and other areas

The urban areas with a population of more than 5,000.

Urban centres which have 'high' population density.

Source: National Spatial Strategy, 1999.

And these challenges have been re-enforced by the recent pattern of development



- Most recent Census figures (2002) are showing a 'doughnut effect'.
  - Dublin City (↑ 2.7%); Dublin region (↑ 6.1%); Neighbouring counties (↑ +20%);
  - Cork City (↓ 3%); Co. Cork (↑ 10.7%);
- Huge developmental sprawl in the greater Dublin region.

In the current economic climate some may prefer to wait for greater certainty in the business case.

- However, if everyone waits for something to happen, it is likely that there will be no significant developments.
- Chicken and Egg scenario?

Operators ?

Services ?

Profits ?

Customers ?

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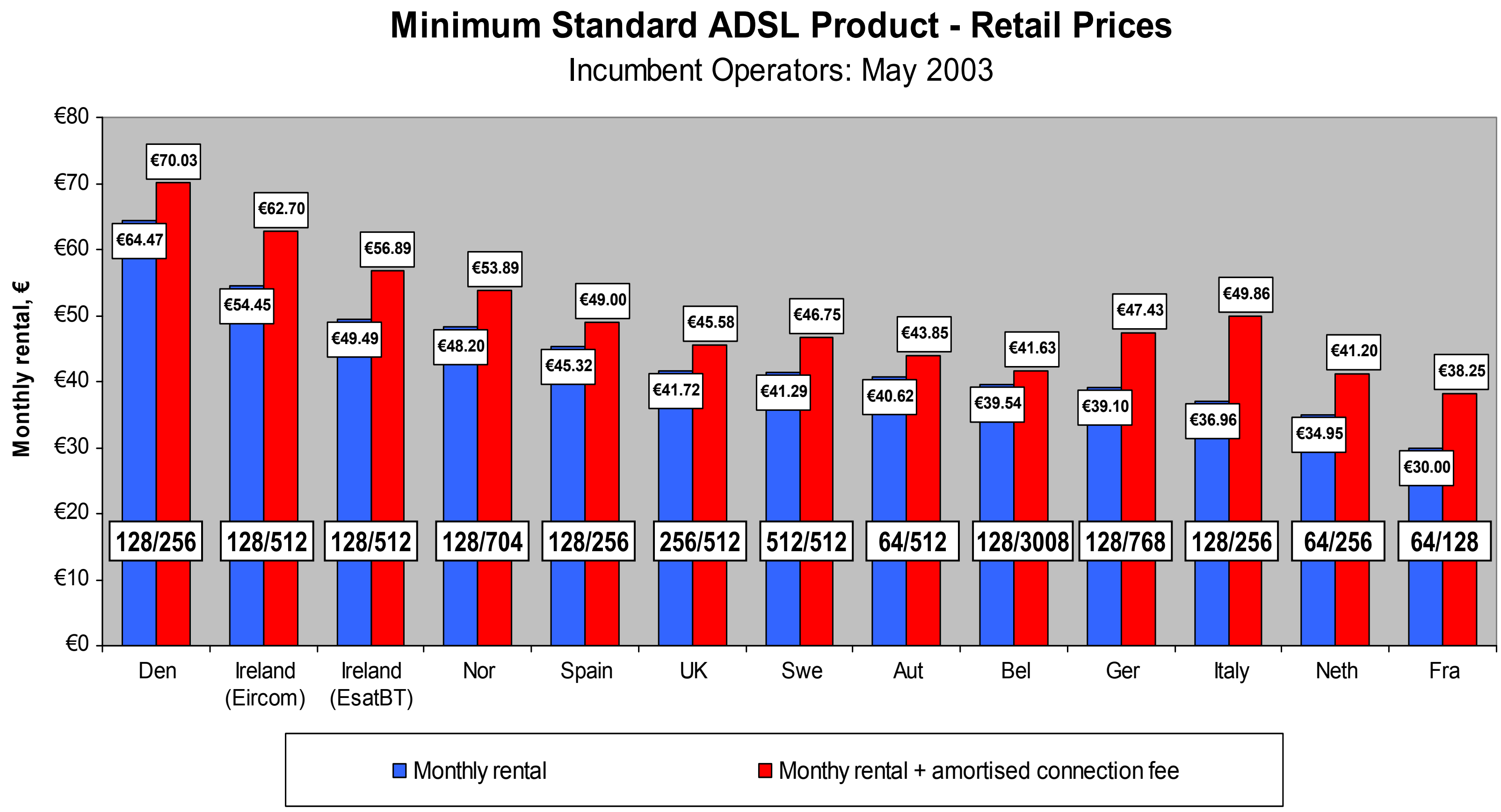
Despite recent reductions, Ireland's DSL charges are still amongst the highest in Europe



Note: The figure for Denmark includes the charge for line rental.
The cost of modems is not included in these calculations. Some operators may subsidise or provide modems free of charge (e.g. EsatBT).

Source: Teligen, VAT included

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Demand: Different Markets segments have different concerns

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	Large Corporates	SMEs	Residential
Number	1,000+/-	89,000 (80,000: 1-10 employees)	1.3m households
Current Broadband Needs	Email; Fast file transfer; High-speed Internet access; Inter-site VPNs; Corporate LAN access for homeworkers	Email, Fast-file transfer; High speed Internet access for researching.	Email, e-commerce; General Surfing
Key Concern	Very high-bandwidth requirements; Reliability; Security; Choice of providers.	**Cost control; Efficiency gains**	**Price; Usefulness; Unfamiliarity.**
Priority for broadband adoption	Needs mostly catered for already by leased lines; Some need for Homeworkers	High; 'low-hanging fruit' for operators?	High-medium

SMEs: Most SMEs use the Internet for relatively simple activities

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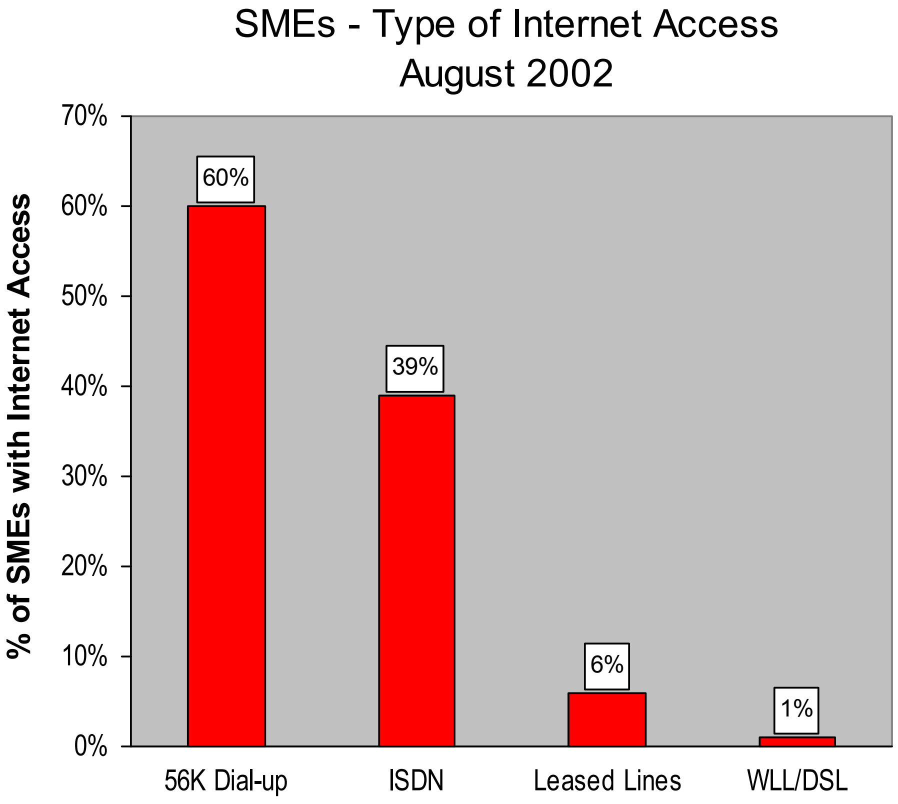
- Most SMEs are online (85%), but dial-up is still the predominant mode of access.
- The majority of SMEs still use the Internet for simple activities
  - 76% - communications/email
  - 45% - transfer files / documents
  - 42% - eCommerce Transaction
- Although 46% of SMEs have a web-site, there are issues for companies availing of the productivity gains of e-business.
  - 10% - review business opportunities/make bids
  - 13% - after sales support
  - 18% - purchase goods and services for business



SMEs: Nevertheless, there are still major benefits in moving to broadband.

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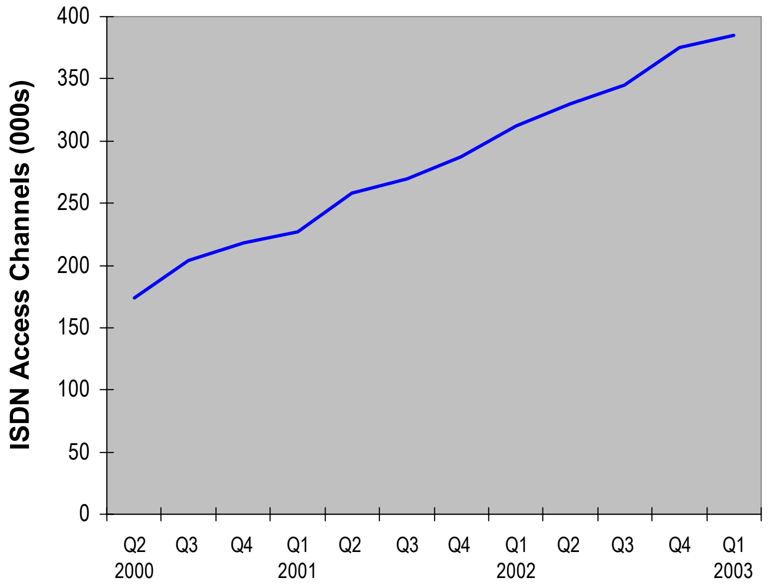
- As Internet usage becomes more sophisticated – and there are issues for SMEs in moving up the learning curve – broadband makes more sense.
- ISDN's per minute charge means that for SMEs who use the Internet a lot, their costs can build up relatively quickly.
- Opportunity for service providers to sell benefits of broadband to SMEs as increased efficiency (faster 'always-on' connection) at a controlled cost (set monthly fee).

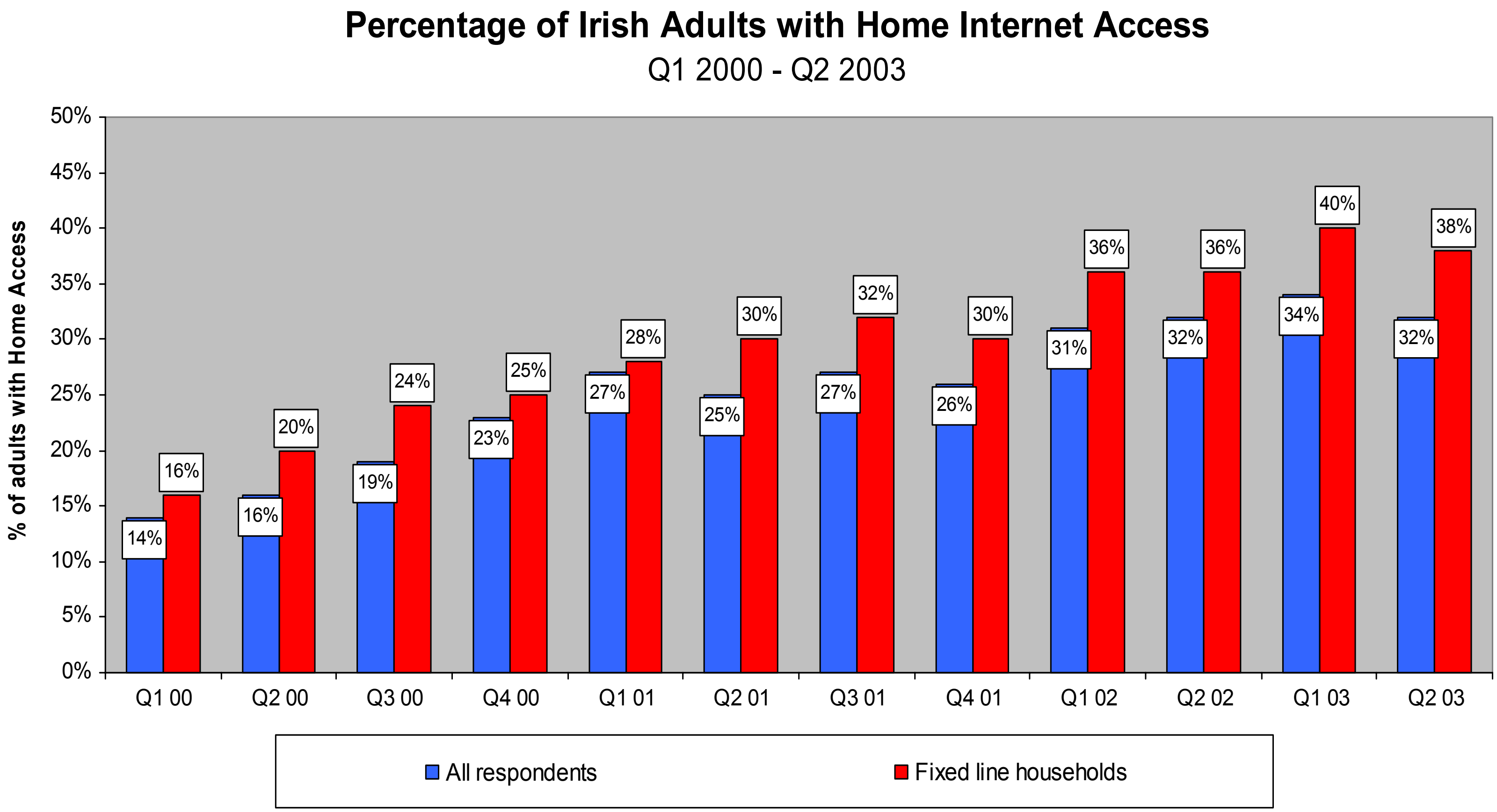
Growth in ISDN Access Channels: 2000 - 2003



"We were suffering on ISDN and having to cope with the peculiarities of a 30 year old technology until our new DSL connection was installed in mid-January. We have seen immediate benefits including significant cost reductions and improved productivity. When we were using the ISDN line we would switch it on at 8 in the morning and it would have been open until 8 in the evening many days. Our bills were running at €400-500 per month for this service alone. With DSL we are paying just €90 per month."

Sources: Case Study from an operator's web-site

Residential: Most PC homes also have the Internet.



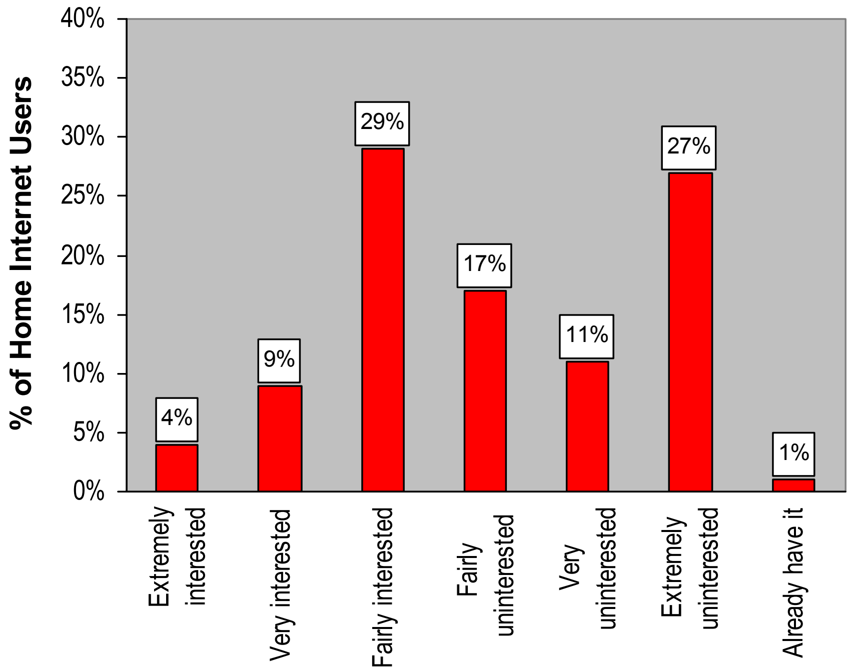
- However, is low PC ownership holding back Ireland's Internet penetration?

Source: Amarach Consulting, May 2003.
Note: 1,053 people surveyed aged 15 – 74. Surveys were conducted face-to-face in respondents' own homes at 132 different locations throughout the Republic..

Residential – Generally well disposed towards broadband, but how much do they really know about it?

- Reasonable interest in subscribing to a broadband service (42% express some interest)
- However, this interest is muted by the general lack of awareness of the product.
  - 44% - “know nothing/never hear of it”.
  - 43% - “know a little”
  - 13% - “know a lot”

How interested are you in getting a broadband ADSL service?



Note: Amarach's survey comprised of 1,053 face-to-face interviews with a representative sample of the population of Irish adults aged 15-74. Interviewing was conducted in respondents own homes at 132 different locations between 5th and 22nd May 2003.
Base: Those with home Internet Access (n=335)

Sources: Amarach Consulting, Consumer TrendWatch Q2 2003, May 2003.

Given this lack of awareness, is it surprising that there is little demand at current price levels?

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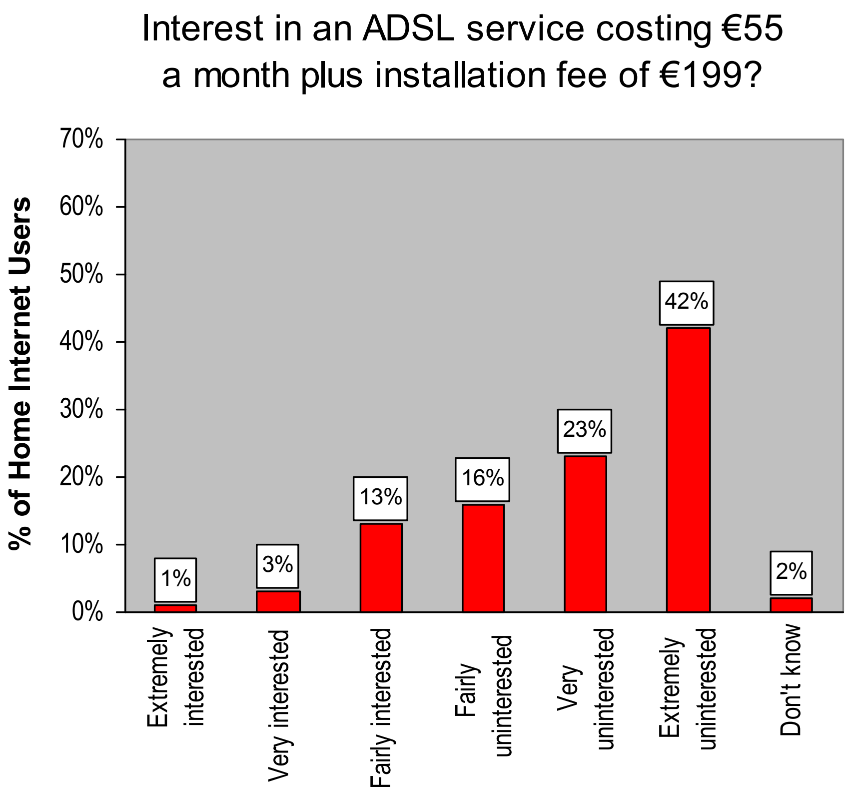

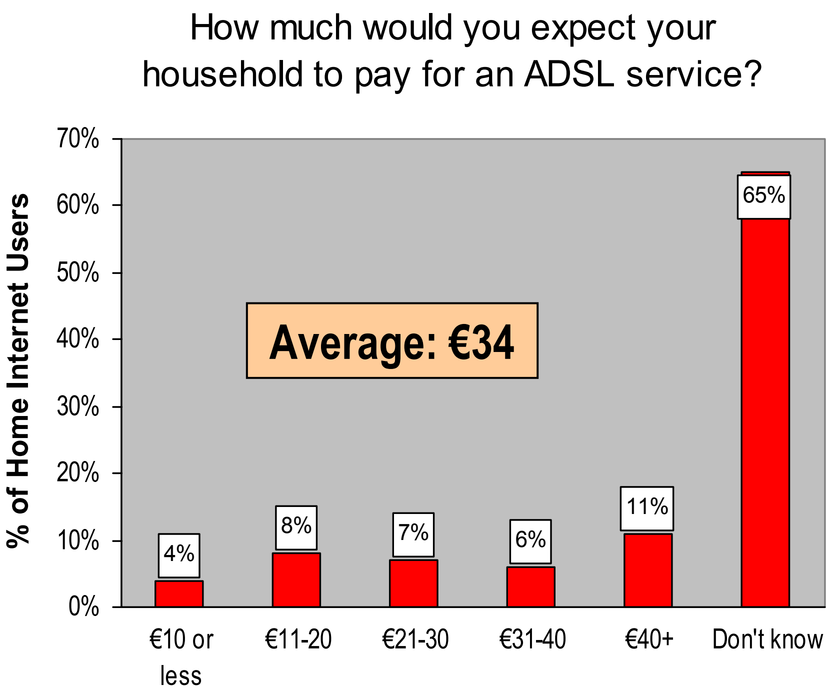

- It is noteworthy, however, that whilst people are unwilling to purchase broadband at current prices, this decision is not based upon any particular price expectation.
- Hence, if consumers were more aware of the benefits of broadband, would they value the service more??

Source: Amarach Consulting, Consumer TrendWatch Q2 2003, May 2003. Base: Those with home Internet Access (n=335)

Are consumers clear on what is different about the broadband experience?

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- Broadband has a number of clear advantages over dial-up Internet:

1. **Voice and data calls at same time** – In countries where residential ISDN is not widely available, freeing up the voice line is a major selling point.

2. **Increased speed** – Slow dial-up access creates an end-user experience of rushed annoyance ("Anxious Time"). With a high-speed connection the end-user's experience is more relaxed and unpressured ("Timeless Time").

3. **'Always-on'** – Flat-rate tariffs and a separate voice channel remove the need to continuously connect and disconnect to the Internet. The end-user can enjoy their time on the Internet without feeling 'watched and counted'.

Ireland – High potential for consumer/residential broadband services.

- Ireland has many qualities that make it well placed for adoption of broadband services – IT savvy, English-speaking, high-spend on entertainment services:
  - In 1999 Irish households (along with Spain and the UK) had the highest levels of ‘recreational consumption’ in the EU.
  - Between November 2000 and August 2002 Sony sold 180,000 Playstation 2 game machines in Ireland. It is estimated that there are over 0.5m units in Irish homes, a penetration rate bettered only by Japan
  - In 2001 Ireland had the highest per capita cinema attendances with 4.2 visits per person (almost double the EU average of 2.4 visits) and contributed the highest box office receipts per capita at €21.70 (the EU average is €13.70).
  - Ireland has the second highest density of video retail outlets in the EU and by far the largest spend per capita on video rentals (€20.90 per person in 1998). In terms of video rentals – the Irish rented a 34.2 videos per household in 2000, well ahead of the EU average of 6.

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ComReg programme for 2003

- **Promote Competition**
  - Introduction of Access products – PPCs and Wholesale line rental
  - Support the introduction of FRIACO
  - Benchmark Irish ICT sector against key indicators in price and choice of products or services in the OECD
- **Consumer awareness**
  - Develop the CPS regime
  - Review and improve companies complaint management including production and monitoring of results
  - Implement the USO Directive
- **Promote Innovation & Investment**
  - Review Convergence
  - Forward Looking Programme
  - Make best use of Spectrum for Broadband
- **Regulatory Certainty & Professionalism**
  - Regulatory package including new EU package implemented to deadline

Role of Regulation in Broadband Access

- **Developing and Maintaining Competition**
- **Specific Measures:**
- **Leased Lines (22,000 lines approx 95 % under 2 mb)**
  - Regulator mandated *eircom* to offer OLO's a Service Level Agreement (SLA) for wholesale leased lines: deliver now at best EU standards.
  - Regulator may intervene in market depending on Market Analysis.
- **PPC (Partial Private Circuits)**
  - More efficient method of leased line configuration mandated by ComReg
  - Pricing request to *eircom* subject to court proceedings

Role of Regulation in Broadband Access

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- **Local Loop Unbundling (LLU)**
  - EU LLU Regulation forcing *eircom* to publish offer and meet requests from 1/1/01
  - LLU processes developed under ComReg auspices, forcing *eircom* to publish offer and meet requests – slow process, but finished in 2002.
  - EsatBT - 38 exchanges unbundled and offering services
  - Pricing subject to courts: eircom sought €27; ComReg determined €14.67
- **Eircom's DSL products ('Bitstream')**
  - Wholesale pricing approved by regulator.
  - Demand low with high price.
  - Retail pricing reduced with new wholesale offering in Spring 2003.
- **Licensing Schemes for Spectrum**
  - 3G
  - FWA
  - WLANs
- **FRIACO - (Flat Rate Internet Access Call Origination) Narrowband dial-up product**
  - *eircom* directed to offer wholesale interconnection product to OLOs
  - Expected delivery date for end-users - 27th June 2003

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Conclusions

- Supply has been slow but is now improving. Key National priority.
- Concerns about competition, platforms and service to grow the market – convergence can help.
- Demand – needs further stimulation – price is a concern for all.
- Need to segment markets – Large business, SME and residential.
- SMEs use Internet – but challenge is to move to e-business/e-commerce.
- Residential challenge – Increase awareness of benefits of broadband.