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Bridging the Digital Divide

The role of Broadband Satellite Communications

Global Forum 2003

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About Hughes

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    graph TD
      GM[General Motors] --> HNS[HUGHES NETWORK SYSTEMS]
      HNS --> HNSE[HUGHES NETWORK SYSTEMS EUROPE]
      HNS --> PanAmSat[PanAmSat]
      HNS --> DIRECTV[DIRECTV]
  
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Hughes Network Systems Europe is a fully owned company of HNS Inc

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Hughes invented VSAT and still leads Technological Innovation

Timeline of VSAT technology:

- 1999: Invention of first VSAT
- 2000: First Mesh VSAT (PES™)
- 2001: DIRECTV®
- 2003: DirecPC®

Additional milestones:

- DirecDuo™
- Shipped 8,000,000th DIRECTV Set-Top box

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HNS Europe is the VSAT Service Market Leader in Europe

HNS Europe has a share of 30% of all European Shared Hub Operator Market Share (source Comsys 2003)

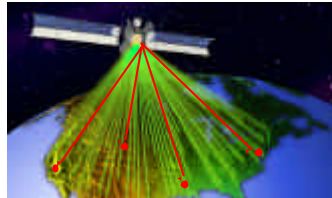
Company	Market Share (Estimated)
HNS	30%
AT&T Global	15%
DeTeSat	10%
Concert BT	5%
Other Regional	5%
Other Domestic	5%
Telespazio	5%
Telenor	5%
Telefonica Data	5%
Gilat Europe	5%
Spaceline	5%

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SPACEWAY™

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- 10 Gbps "switch in the sky"
- 60 cm, Ka band antennas
- Supports data, voice, images, and video
- Individual terminals receive data in excess of 30 Mbps
 - 30 times the capability of cable modems
 - 10 times greater than typical highspeed terrestrial DSL
- **Any end-user terminal can directly connect by dialing a number, in any other at broadband speed**



SPACEWAY satellites in USA owned and operated by Hughes Network Systems

Two domestic satellites planned with one in-orbit spare: launch in Spring 2004, full service in Q3 2004



Planning to launch same service, in partnerships, in Europe by 2006

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Digital Divide

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- Digital Divide was traditionally referred to as the gap between those who have access to Information Technologies, and those who do not
- **Kofi Annan: IT Industry Must Help Bridge Global Digital Divide**
 - United Nations Secretary-General Kofi Annan addressed business leaders at a conference on the role of industry in bridging the global digital divide:
 - *"The swift emergence of a global information society is changing the way people live, learn, work and relate. An explosion in the free flow of information and ideas has brought knowledge and its myriad applications to many millions of people, creating new choices and opportunities in some of the most vital realms of human endeavour. Yet too many of the world's people remain untouched by this revolution. A digital divide threatens to exacerbate already-wide gaps between rich and poor, within and among countries. The stakes are high indeed. Timely access to news and information can promote trade, education, employment, health and wealth. One of the hallmarks of the information society – openness – is a crucial ingredient of democracy and good governance. Information and knowledge are also at the heart of efforts to strengthen tolerance, mutual understanding and respect for diversity."*
- As the UN Secretary-General says, digital divide is not just a problem for developing countries. In rich nations there are race, gender and income issues.
- Computers availability and computer literacy is still an issue, but new challenges are mounting

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A new form of Digital Divide

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- **The Alliance for Public Technology (APT)** and **the Benton Foundation** released recently the online version of a new report featuring case studies of community-based broadband applications:
 - *"This document articulates our strong belief that broadband can change the way people live, work and learn," said Paul Schroeder, President of APT. "Broadband is an essential tool for empowering people and offering opportunities for better health care, lifelong learning, independent living and more that can enhance the quality of life."*
- Hence, digital divide is not just about being computer-literate. There is also a need to access and exchange content-rich information over the Internet. For that purpose, broadband connections are required.
- Broadband access is widely available in many nations
- However, even where broadband access is widely available, there is a large chunk of the population that is "out of reach": a new form of digital divide is emerging.

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Information society – some statistics

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	EU-15*	Japan*	South Korea*	USA*	World**
Number of PC	127,000,000	47,400,000	25,600,000	192,000,000	496,000,000
per 100 inhabitants	33%	37%	53%	67%	8%
Internet Users	131,514,000	20,478,000	26,130,000	157,245,000	500,000,000
per 100 inhabitants	45%	15%	50%	65%	6%
Broadband connections	18,257,349	9,392,433	10,795,169	20,723,003	+
per 100 inhabitants	5%	7%	22%	7%	+

Sources: * Baskerville Telecom, 2003; ** ITU, 2001

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Focusing on Broadband



- There were 20.7 million broadband subscribers in the US at the end of June 2003, net additions of 1.5 million over the quarter, down on the 1.7 million net additions between January and March. Broadband penetration in the US now stands at 7.2 per cent of the population and 11.6 per cent of access lines.
- At the end of the second quarter of 2003, there were a total of 18.2 million broadband subscribers in Western Europe, up from 16.1 million at the end of the first quarter. Assuming trends have continued, total broadband subscribers should have passed the 20 million mark by the end of the third quarter. At the end of the second quarter, Germany, having just crept over the 4 million subscriber mark, still accounted for over 20 per cent of western Europe's broadband connections.
- South Korea had the highest penetration of broadband connections, with almost 11 million broadband subscribers, or 22% of the population.
- In contrast, there were 37,623 broadband subscribers in the Czech Republic by end-September 2003, an increase of 34 per cent over the quarter. However penetration rates are still very low, standing at 0.004 per cent of the population and 0.01 per cent of access lines.

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The role of local authorities in the UK



- Local authorities in the UK have a major role to play in developing the economy in their regions
- In England, non-departmental public bodies called Regional Development Agencies (RDAs) were created in 1999 to act as strategic drivers of regional economic development. Scotland, Wales and Northern Ireland have their own Development Agencies, too.
- Each RDA has 5 statutory purposes, which are:
 - To further economic development and regeneration
 - To promote business efficiency, investment and competitiveness
 - To promote employment
 - To enhance development and application of skill relevant to employment
 - To contribute to sustainable development

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Broadband as a tool for economic growth



- Most RDAs have identified broadband availability as an indispensable tool to promote economic growth in their region
- This is consistent with UK government policy and priorities: out of £6 billion pledged by the PM in November 2006 to promote e-government, £1 billion were specifically pledged to broadband development
- At the regional level, in July 2002 Wales launched a £100m Broadband programme. Broadband Wales brings high-speed connections to 310,000 extra homes and 67,000 more businesses in Wales. It is the biggest ever Government investment of its kind in broadband in the UK.
 - WDA Chief Executive Graham Hawker said that Broadband Wales would have a significant impact on the future development of the Welsh economy: "The availability of affordable higher bandwidth services will be a huge boost for Welsh businesses, enabling them to compete more effectively in the global marketplace regardless of their location. It will also be a strong international marketing tool, making Wales an extremely attractive location for inward investment projects."

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Terrestrial Broadband: even in London, it may not be available everywhere



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Outside London, even less



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The case for satellite broadband



- Gaps in terrestrial coverage provide opportunities for satellite:
 - This holds true both in developed countries (e.g., the UK) and, even more so, in developing nations where otherwise the cost of terrestrial infrastructures could be prohibitive
- Satellite broadband is available anywhere, can be deployed in matter of days, it is easily scalable to meet demands, and offers high availability and quality of service
- Satellite is a viable broadband solution for enterprises of any size, as well as for public organizations. Satellite terminals can be relocated as terrestrial broadband "advances", protecting the investment of private or public organizations.
- Satellite integrates perfectly with all wireless technologies – effectively enabling broadband anywhere in the most cost-efficient way.
- Satellite connectivity, in conjunction with W-LAN, brings broadband access to rural communities

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Businesses do not need to relocate



- Sweets for Treats has been a successful UK business in County Durham for many years. Due to location it was unable to get high speed Internet access. Satellite broadband has enabled the business to gain high speed, always-on connection to the Internet and truly compete in the global market place.



- Local translation firm, Eclipse Translations, which regularly provides its services to the public sector and government organisations, was considering relocating due to a lack of access to broadband. By utilising satellite broadband, this business has stayed and importantly, jobs have remained available in an area where unemployment could have been a serious problem.



- Whitworth Hall County Park Hotel found itself with no broadband provision and utilises satellite to gain high speed, always-on connection to the Internet

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Village of Butembo, Zaire



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Signis pupils assembling for lesson at Kataliko school in Butembo

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Satellite enables learning even where a teacher is not always available

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Life in the classroom

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Conclusions

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- A new form of digital dividing is emerging, affecting not only developing countries but also disadvantaged region in developed nations.
- This is the divide between those who have access to broadband communications, and those who have not.
- Broadband is an essential tool for empowering people and offering opportunities for better health care, lifelong learning, independent living and more that can enhance the quality of life.
- Terrestrial broadband communications will never be available everywhere: businesses and individuals will be affected, in particular in rural areas.
- There is a solution. Satellite can provide always-on, two-way broadband communications to everyone, everywhere, now.
- Whether in heart of London, in the UK, or in the village of Butembo, in Zaire, satellite plays a vital role in empowering people.

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