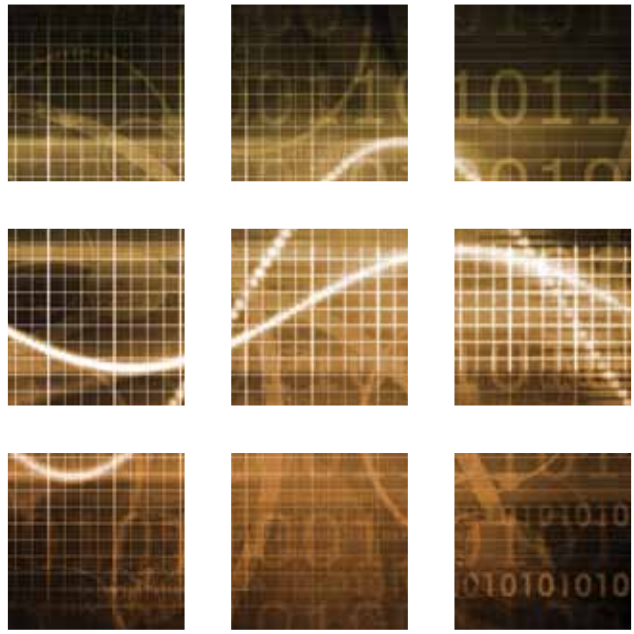

Enhancing the business value of broadband

Recent views from Chief Information Officers

Results from the 2012 CIONET & INSEAD eLab survey of European CIOs on the business value of broadband

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Background

This report was developed in response to EU Commission Vice-President Neelie Kroes' request to better understand the views of Chief Information Officers from organizations that invest in broadband services.

Chief Information Officers (CIOs) are especially savvy about both what it takes to provision ICT infrastructure services, such as broadband, and what it takes to contract and foster a mutually-beneficial relationship between a client and service provider. However their experiences and insights are often lacking in policy discussions regarding how to enhance the business value of broadband.

EU Commissioner Neelie Kroes is responsible for the Digital Agenda in Europe. Following-up on the successful collaboration between CIONET, INSEAD eLab and her team on the 2011 European CIO of the Year awards and 2011 IT-Enabled Leadership Report, Commissioner Kroes requested CIONET and INSEAD eLab to survey CIONET members on the business value of broadband. The survey was conducted online over a period of 3 weeks, from 16 January until 8 February.

What follows are the key insights from the results.

Acknowledgements

This report and the research it is based on would not have been possible without the generous support of many people. The collaborative development of this report was led by Nils Olaya Fonstad, Associate Director of INSEAD eLab. The author greatly acknowledges the CIOs who took the time to complete the survey. Special thanks to colleagues Bruno Lanvin, Lazaros Goutas, and Virginie Bongeot-Minet from INSEAD eLab; EU Commission Vice-President Neelie Kroes, Constantijn van Oranje-Nassau, Lucilla Sioli, Jack Schickler, and Gianluca Papa from Digital Agenda for Europe, Information Society and Media Directorate-General; and Hendrik Deckers, Frits Bussemaker, and Mieke Pauwels from CIONET.

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Introduction by EU Commission Vice-President **Neelie Kroes**

My goal is to get every European digital and make Europe the connected, competitive continent. But to do that, it is important to hear from those who use broadband to boost their businesses.

So, a few months ago, I asked INSEAD and CIONET to survey the members of CIONET on the business value of broadband. And I am delighted that CIOs have responded so positively to my call, and have presented me with this important study.

All in all, this study shows that broadband delivers for businesses - whether it is by helping staff work collaboratively, or by giving access to important new resources like the cloud.

And the message from those participating CIOs is clear: to get the benefits of broadband, the EU needs competitive markets and wide availability.

CIOs provided four new important sets of insights with regard to enhancing the business value of broadband:

1. The impacts of having greater broadband connection speeds (rather than from simply having access to broadband or not);
2. The key drivers of future demand for greater broadband connection speeds;
3. The challenge faced by many CIOs of managing across locations with different connection speeds; and
4. Barriers to adoption that CIOs believe the European Commission could help remove.

The issues in this report are things I take very seriously. Indeed in many areas we are already working hard: after all, getting broadband coverage for all is a key target of the EU's digital agenda. That's why I continue to champion the importance of open and competitive markets to stimulate innovation, initiative and investment. That's why with the Connecting Europe Facility, we have proposed over 7 billion euros of EU broadband funding – mainly through innovative financing – to decrease perceived risk, "crowd in" private sector finance and deploy broadband across Europe. That's why we are taking forward measures to cut the cost of high-speed broadband infrastructure. And what's more, so that we can all enjoy the opportunities afforded by high-speed broadband, we are preparing a cloud computing strategy to identify and overcome barriers to take-up.

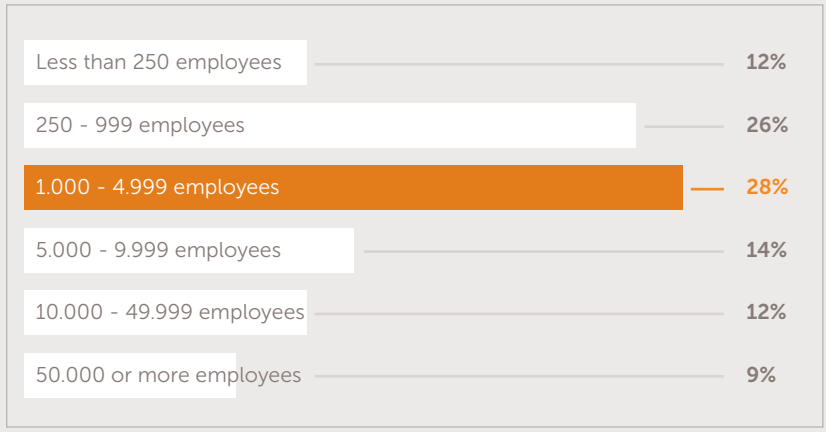
Studies like this one are a new platform for interaction between my team, academia and key leaders from the business sector, specifically Chief Information Officers from non-ICT sector firms. I look forward to meeting contributors at the forthcoming CIO CITY conference. And hope that overall this can be the beginning of a regular dialogue, with continuing constructive input on how the European Commission can best enable their organisations to operate and innovate competitively.

Neelie Kroes

Profile of survey participants

Over 110 CIOs took the time to share their views on broadband to Commissioner Kroes.

Most participating CIOs (88%) represent large firms (i.e., firms with 250 or more employees). About a quarter of participating CIOs represented firms with 250 – 1,000 employees; another quarter representing firms with 1,000-5,000 employees; and another quarter between 5,000 and 50,000 employees.



Source: 2012 CIONET and INSEAD eLab survey of CIOs on business value of broadband.

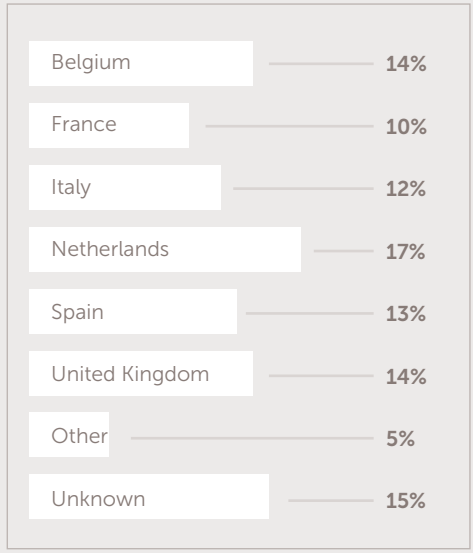
Participating CIOs represent a variety of sectors,

particularly Manufacturing (26%) and Financial services (16%).

Source: 2012 CIONET and INSEAD eLab survey of CIOs on business value of broadband.

Participating CIOs represent several European countries,

particularly Belgium, France, Italy, Spain, the Netherlands, and the United Kingdom.



Source: 2012 CIONET and INSEAD eLab survey of CIOs on business value of broadband.

Increases in broadband speeds

Over the past 3 years, over two-thirds of participating firms experienced increases in broadband connection speed.

- Over the past 3 years, at their fastest location:
  - 26% of survey participants (N=29) experienced an increase in broadband speed by a factor of less than 3;
  - One third of survey participants (33%, N=36) experienced an increase in broadband speed by a factor of 3 to 10; and
  - 15% of survey participants (N=17) experienced an increase in broadband speed by a factor of 3 to 10.
- Over the past 3 years, at their slowest location:
  - 25% of survey participants (N=28) experienced an increase in broadband speed by a factor of less than 3;
  - 23% of survey participants (N=25) experienced an increase in broadband speed by a factor of 3 to 10; and
  - 7% of survey participants (N=8) experienced an increase in broadband speed by a factor of 3 to 10.
- Over the past 3 years, one quarter (N=28) of survey participants did not experience any substantial improvement in broadband connection speed at their fastest (or only) location. For organizations with multiple locations, just over a third (36%, N=40) did not experience any substantial improvement in broadband connection speed at their slowest location.

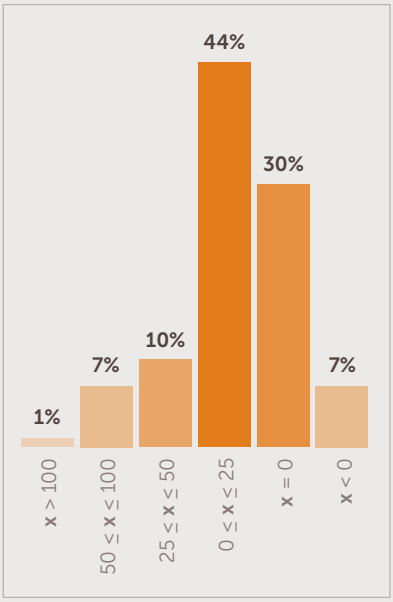
Amongst those firms that experienced an increase in broadband speed, about a third (30%) experienced no change in overall costs for broadband; about two-fifths (44 %) experienced an increase in overall costs of less than 25 percent; and about a fifth (18%) experienced an overall increase of 25 percent or more.

Table: Number of firms with a specific speed at location with fastest connection and experienced change in speed at that location (N=110)

Change over past 3 years at fastest location	Speed at fastest location (Mbit/s)					Total
	> 100	30 - 100	10 - 30	2 - 10	< 2	
None	15	5	4	4	0	**28**
By a factor < 3	15	4	6	3	1	**29**
By a factor 3 - 10	17	12	3	4	0	**36**
By a factor > 10	9	3	3	2	0	**17**
Total	**56**	**24**	**16**	**13**	**1**	**110**

Source: 2012 CIONET and INSEAD eLab survey of CIOs on business value of broadband.

Estimated change in overall cost for broadband, as a percentage of the previous price, for firms that experienced an increase in broadband connection speed, over the past 3 years (in %) (N=82)



Source: 2012 CIONET and INSEAD eLab survey of CIOs on business value of broadband.

Benefits on the business of increases in broadband connection speed

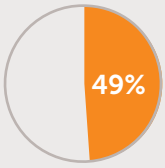
Survey participants that experienced an increase in broadband connection speed were asked to consider the extent to which their organization experienced a variety of impacts.

The greatest reported impacts of experiencing faster broadband connection speed were related to mixture of internal operational benefits – i.e., benefits with regards to how things get done internally – and external engagement benefits – i.e., benefits related to an enhanced capacity to engage with external stakeholder groups, such as external service providers, external customers and external partners.

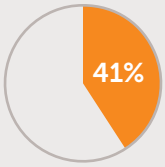
The most significant reported impact was that increased broadband connection speed strengthened collaborative approaches within the enterprise. The next two most significant reported benefits of increased broadband connection speed were that it stimulated the use of software as a service or cloud computing activities and it mitigated risks of continuity/disaster.

The following percentage of CIOs of organizations that experienced an increase in their broadband connection speed reported the following greater impacts from their investments (N=82, representing 75% of participants).

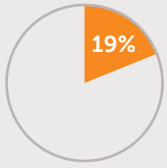
Benefits to Internal Operations
of increases in broadband connection speed



It has strengthened collaborative approaches within the enterprise



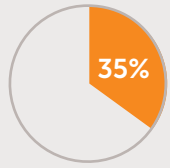
It has mitigated risks of continuity/disaster



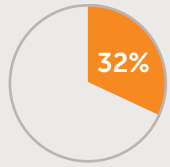
It has facilitated the internal reorganisation of work

% of organizations that reported this benefit as one of the top two greatest impacts of increased broadband speed

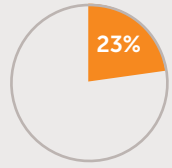
Benefits to Engaging with External Stakeholders
of increases in broadband connection speed



It has stimulated the use of software as a service or cloud computing activities



It has facilitated engagements with external customers



It has facilitated exchanges with external partners, including the PA

% of organizations that reported this benefit as one of the top two greatest impacts of increased broadband speed

Source: 2012 CIONET and INSEAD eLab survey of CIOs on business value of broadband.

Key drivers of future demand

93%

The vast majority of participating CIOs anticipate their organizations will demand higher speed broadband services.

CIOs report that the main driver for future demand for greater broadband speeds will be using software as a service or cloud computing activities.

When asked what are the top three drivers for higher speed broadband, participating CIOs reported the following.

Drivers related to enhancing internal operations dominated the three key future drivers for faster broadband connections.

Table: Percentage of CIOs that selected the following as one of the top three drivers of future demand for greater broadband speeds (N=104)

62%	Using software as a service or cloud computing activities
55%	Making internal business processes more efficient and effective
51%	Strengthening collaborative approaches within the enterprise
45%	Facilitating exchanges with external partners
45%	Enhancing engagements with external customers
31%	New revenue generating products or services

Source: 2012 CIONET and INSEAD eLab survey of CIOs on business value of broadband.

A challenge for CIOs:
Managing across locations with different connection speeds.

Survey data reveal that a significant number of firms must contend with locations with different broadband connection speeds.

Percentage of firms with locations with the same and with different connection speeds (N=111; all values in %).

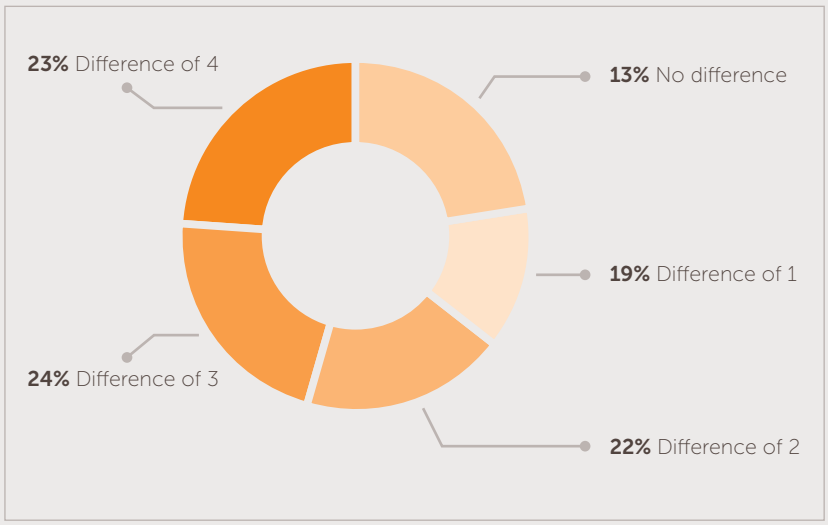
Speed of location with FASTEST connection			Speed of location with SLOWEST connection					Only one location
			≤ 2 Mbit/s	2 - 10 Mbit/s	10 - 30 Mbit/s	30 - 100 Mbit/s	≥ 100 Mbit/s	
			42	32	9	5	5	8
	≥ 100 Mbit/s	51	**21**	**15**	5	2	5	4
	30 - 100 Mbit/s	22	**6**	8	3	3	0	2
	10 - 30 Mbit/s	14	7	5	1	0	0	1
	2 - 10 Mbit/s	12	7	3	0	0	0	2
	≤ 2 Mbit/s	1	1	0	0	0	0	0

Source: 2012 CIONET and INSEAD eLab survey of CIOs on business value of broadband.

Managing
Levels of Difference

The variable "Level of Difference" was created to represent the magnitude of difference in broadband connection speeds between the location with fastest connection and the location with slowest connection. A firm with a Level of Difference of 1 is a firm where the location with the fastest broadband connection has a connection speed of say, either "at least 2 Mbit/s but less than 10 Mbit/s" or "at least 30 Mbit/s but less than 100 Mbit/s," and at the location with the slowest connection, a speed of one less on our scale (i.e., either "less than 2 Mbit/s" or "at least 10 Mbit/s but less than 30 Mbit/s").

Most CIOs report managing across locations with different broadband connection speeds



Source: 2012 CIONET and INSEAD eLab survey of CIOs on business value of broadband.

About a quarter of CIOs reported having to manage a Level of Difference of 4 – i.e., the maximum Level of Difference

Level of Difference and Size of Firm

The size of a firm (in terms of number of employees) influences the extent to which the firm has locations with different broadband speeds: larger firms are more likely to have more locations and having a greater number of locations increases the chances that there are differences in broadband speed across those locations.

Having a high Levels of Difference complicates a firm's efforts to access cloud-based services - a top driver of future demand.
As a result, the survey data indicate that larger firms are less likely to take advantage of benefits from increases in broadband speed, particularly internal operational benefits.

Key actions that CIOs believe the European Commission could promote to remove barriers to adoption

CIOs were asked: "What barriers are in the way of your firm adopting higher-speed broadband which you believe the European Commission could help remove?"

Overall, their responses included recommendations for action related to four key areas of action.

The following represent percentage of respondents who advocated the following sets of actions to remove barriers to adoption.

(Please note: some CIOs advocated more than one set of actions).

53	Promote competition to reduce prices; reduce tariffs and excessive charges for services such as data roaming
46	Increase availability and service quality of higher-speed broadband - especially in last mile and rural - also, reduce lead time to implement
24	Enable single face to customer by standardizing contracts and enhancing interoperability
7	Standardize data legislation and regulate frequency band for M2M infrastructures

Source: 2012 CIONET and INSEAD eLab survey of CIOs on business value of broadband.

Representative quotes from survey participants.

- Promoting more competition to decrease the cost into telco markets.
- Most suppliers are focussing on bandwidth which will ultimately mean more revenue for them and content providers rather than on quality, resilience and latency of services. Speed isn't everything!! License applications should impose basic quality metrics to be adhered to.
- Increase the availability of the high-speed broadband and reduce the lead time necessary to implement it.
- Although there are a few players in the telco market, there is still a feeling this market is monopolised by a limited number of suppliers.
- More competition between operators.
- Improve legislation. What is the applicable law when transferring data from A to B, through different countries?
- Barriers for us only relate to properties we have which are remote and local exchanges do not have capability.
- We benefit from competition among two carriers, obtaining best services with same budget. Please, keep the market open.
- Facilitate delivery of high-speed broadband for a reasonable price especially in the Central European countries.
- The choice for the local tail is reduced. We have just two major providers in our market. In reality for a lot of industrial parks (zones) there is just a single choice, as the installation costs for all other providers are too high.
- In some areas, wired broadband is not available, neither 3G. We use satellite radio transmission and recently switched to terrestrial radio transmission. This slows down our attempts of centralization of IT services.
- 1. Stimulate the development of glass fibre networks in Europe.
  2. Remove monopolies for the cable market.
- Monitor and promote competition and interoperability.
- Availability of high speed services (cost effective ones!) and increased competition for high speed local loops.
- One of main issue of hi speed broadband is related to mobile connection. In each country we can find good price for connection , but roaming is very expensive. I think that, almost in EU, roaming prize should be reduced.
- Remove excessive charges for mobile data charges Support broadband penetration in rural areas.
- Ensuring that it is available immediately and there is little or no lag between it availability in the country and availability to the organisation.
- It is impossible to make contracts with [a service provider] in 1 country for services in multiple countries. We are operating in several countries and we need to make separate contracts in every country. I wish I could make for example 1 contract with [the service provider] for the 6 countries we do business with [the service provider] for datalines and or for mobile telephony. Local rules do not allow for that. Local telecom laws are different in all countries. There is no level playing field and no real competition in telecom in all countries. Interconnect fees are too expensive. Telecom is still a national thing. This makes it difficult for us to implement innovative solutions with ICT for our retail chain.
- Remove barriers on EU wide (better would be global) networks due to the legacy on country specific providers and control boards. Delivering professional business lines (as MPLS) take 3 to 6 months whilst private access can be arranged within a week, sometimes even same day.
- Eliminate local "last mile" monopolies.
- We are in 22 countries, including outside EU. In EU differences in price and max bandwidth can be huge, abroad it sometimes is even a bigger issue.

Overview

Enhancing the business value of broadband

Recent views from Chief Information Officers

Results from the 2012 CIONET & INSEAD eLab survey of European CIOs on the business value of broadband

Following-up on the successful collaboration between CIONET, INSEAD eLab and her team on the 2011 European CIO of the Year awards and 2011 IT-Enabled Leadership Report, Commissioner Kroes requested CIONET and INSEAD eLab to survey CIONET members on the business value of broadband. A survey was conducted online during the start of 2012. This report consists of key insights from the results.

The CIOs that participated in this survey provide four important sets of insights with regards to enhancing the business value of broadband:

1. **The impacts** of having greater broadband connection speeds;
2. **The key drivers of future demand** for greater broadband connection speeds;
3. **The challenge** faced by many CIOs of managing across locations with different connection speeds; and
4. **Barriers to adoption** that CIOs believe the European Commission could help remove.

The driving objective of those who participated in this effort is to strengthen engagement between the European Commission, Chief Information Officers and academia. Your participation and comments are welcomed to sustain this dialogue.

About CIONET

CIONET
What's next.

CIONET is the biggest community of IT executives in Europe. Bringing together over 3500 CIOs, CTO's and IT directors from wide ranging sectors, cultures, academic backgrounds and generations, CIONET's membership represents an impressive body of expertise in IT management. CIONET's mission is to feed and develop that expertise by providing top-level IT executives with the resources they need to realise their full potential.

CIONET develops, manages and moderates an integrated array of tools and services from the online CIONET platform – the world's first social network for CIOs – to a range of offline networking events, conferences, workshops and executive education programmes all tailored to top-level management. CIONET also provides exclusive access to the latest research through regular online and offline publications and a number of value adding partnerships with key players from the academic and corporate worlds.

Faced with the rapidly changing role of today's IT executive, CIONET not only helps its members keep up with the pace of change but empowers them to take an active role in shaping the future of their field, always challenging them with "What's next."

About INSEAD eLab

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INSEAD eLab is INSEAD's center of excellence in the global knowledge economy. A key objective of INSEAD eLab is to strengthen links across academia, business leaders and policy makers by:

1. Drawing on a variety of global resources to develop research insights that are academically rigorous and relevant to private and public sector leaders; and
2. Providing leaders with regular opportunities to learn from each other and collaborate more effectively.

Information on INSEAD eLab including research reports, can be found at: www.insead.edu/elab