

# Smart Specialization for Less Favored Regions Outside the EU

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EU HLA on Regional Development



This project is funded by  
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# Europe 2020 Strategy

*“Europe is facing a moment of transformation. The crises has wiped out years of economic and social progress and exposed structural weaknesses in Europe’s economy.*

*In the meantime, the world is moving fast and long-term challenges such as globalisation, pressure on resources, population ageing, are intensifying.”*

- Quote from **Europe 2020 Strategy**



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# Europe 2020 Strategy

EU has set out its vision for the European economy through the **Europe 2020 Strategy**, which aims to correct structural weaknesses by progress within three prioritized areas, which are mutually reinforcing:

## 1. Smart growth; based on knowledge and innovation

- 75 % **employment** rate (% of population aged 20-64 years)
- 3% investment in **R&D** (% of EU's GDP)

## 2. Sustainable growth; promoting a greener, more resource efficient and competitive economy

- “20/20/20” **climate/energy** targets met (incl. 30% emissions reduction if conditions are right)

## 3. Inclusive growth; promoting a high employment economy which creates economical, social and territorial cohesion

- < 10% **early school leavers** & min. 40% hold **tertiary degree**
- 20 million less people should be at **risk of poverty**



# Europe 2020 Strategy

**To invest more in research, innovation and entrepreneurship** is at the heart of Europe 2020 and is an important part of Europe's response to the economic crisis.

The focus is also on a **strategic and integrated approach to an innovation** maximizing European, national and regional research and innovation potential.

It is about improving Europe's ability to deliver *smart, sustainable and inclusive growth* through the concept **smart specialization**.



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# Smart Specialization in ESIF 2014 -2020

European Structural and Investment Funds 2014 –  
2020

Thematic Objective 1:

Strengthening research,  
technological development and  
Innovation

**65.7 billion Euro planned**

**BUT..**

**...S3 is Ex-Ante Conditionality**



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# Why Smart Specialization?

The concept developed as a result of the effort to answer the question why Europe was lagging behind the U.S. in competitiveness (Prof. D. Foray)? Findings were that the research investment in Europe was:

- overly fragmented,
- lacking in co-ordination of research and innovation (R&I) investment between stakeholders, and
- lacking critical mass
- need to embrace the concept of open innovation, not only investment in (basic) research.

It noted a clear '**me-too**' **syndrome** in that regions made investments in areas that were too similar and fashionable

- Regions need to focus on certain domains but being focussed is not enough they need to focus by developing distinctive and original areas of specialisation (not by imitating each other)



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# Megatrends shaping our future

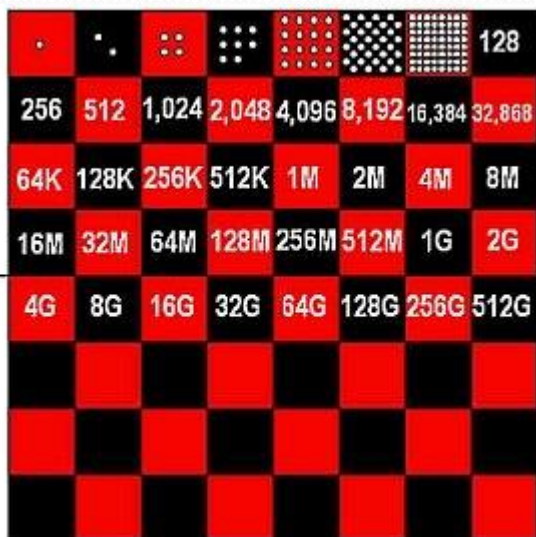


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# Indian chess legend as an example of exponential growth



The king was a big chess enthusiast and had the habit of challenging wise visitors to a game of chess. One day a traveling sage was challenged by the king. To motivate his opponent the king offered any reward that the sage could name. The sage modestly asked just for a few grains of rice in the following manner: the king was to put a single grain of rice on the first chess square and double it on every consequent one.

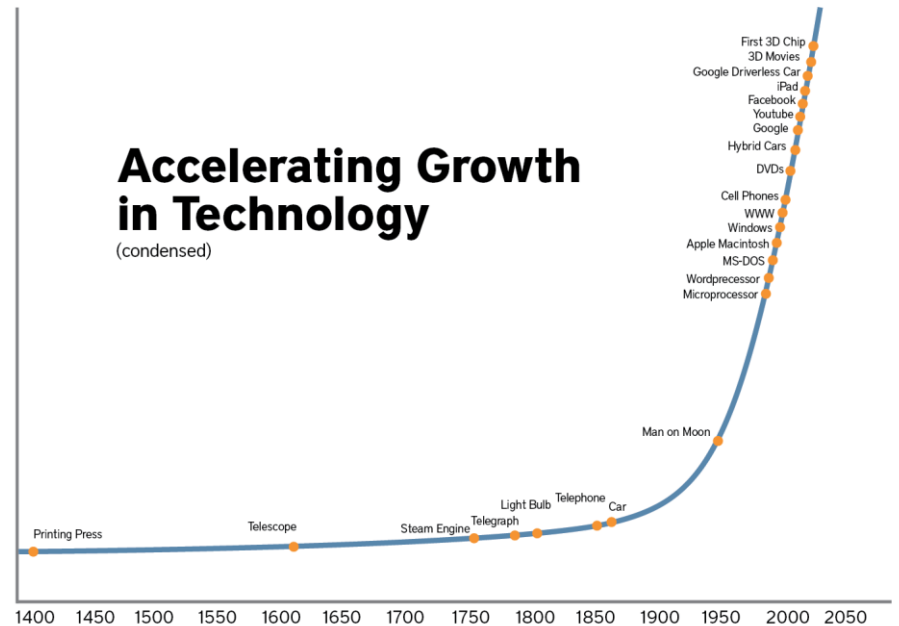
- the twentieth square = 1,000,000 grains of rice.
- fortieth square = 1,000,000,000 grains of rice.
- sixty fourth square = **18,000,000,000,000,000,000** grains of rice which is equal to about 210 billion tons and is allegedly sufficient to cover the whole territory of India with a meter thick layer of rice.





# Exponential growth of knowledge and technology

Technology's exponential growth rate means we are now accomplishing in one year what took centuries in ancient history.



The smartphone in your pocket provides a better communication tool than the President of the United States had access to just 25 years ago, and provides access to more data than he had access to just 10 years ago.



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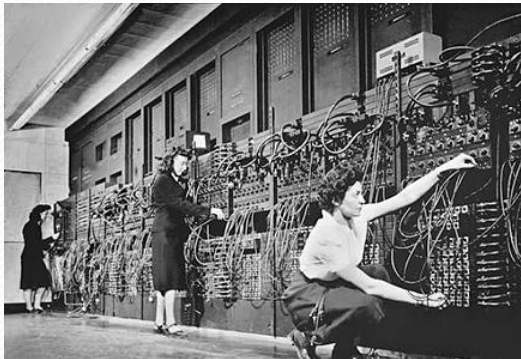


# First computer vs mobile phone

The first computer was the ENIAC.  
It was developed in 1946 at Princeton University.  
It cost about \$6,000,000  
It was about 8 feet high, 3 feet deep, and... 80 feet long  
It weighed 30 tons!  
It used a lot of power and it was very hot!  
And... it was down half the time to replace vacuum tubes gone bad.  
The ENIAC weighed about as much as all the students in an average middle school altogether!

Mobile phone compared to the giant ENIAC:  
It cost 17,000X less  
It is 40,000,000X smaller  
It uses 400,000X less power  
It is 120,000X lighter  
But...  
It is 1,300X more powerful.

...and this is just a cell phone with texting, MP3, and 0.3 mega-pixel picture capabilities from 1999.



VS.

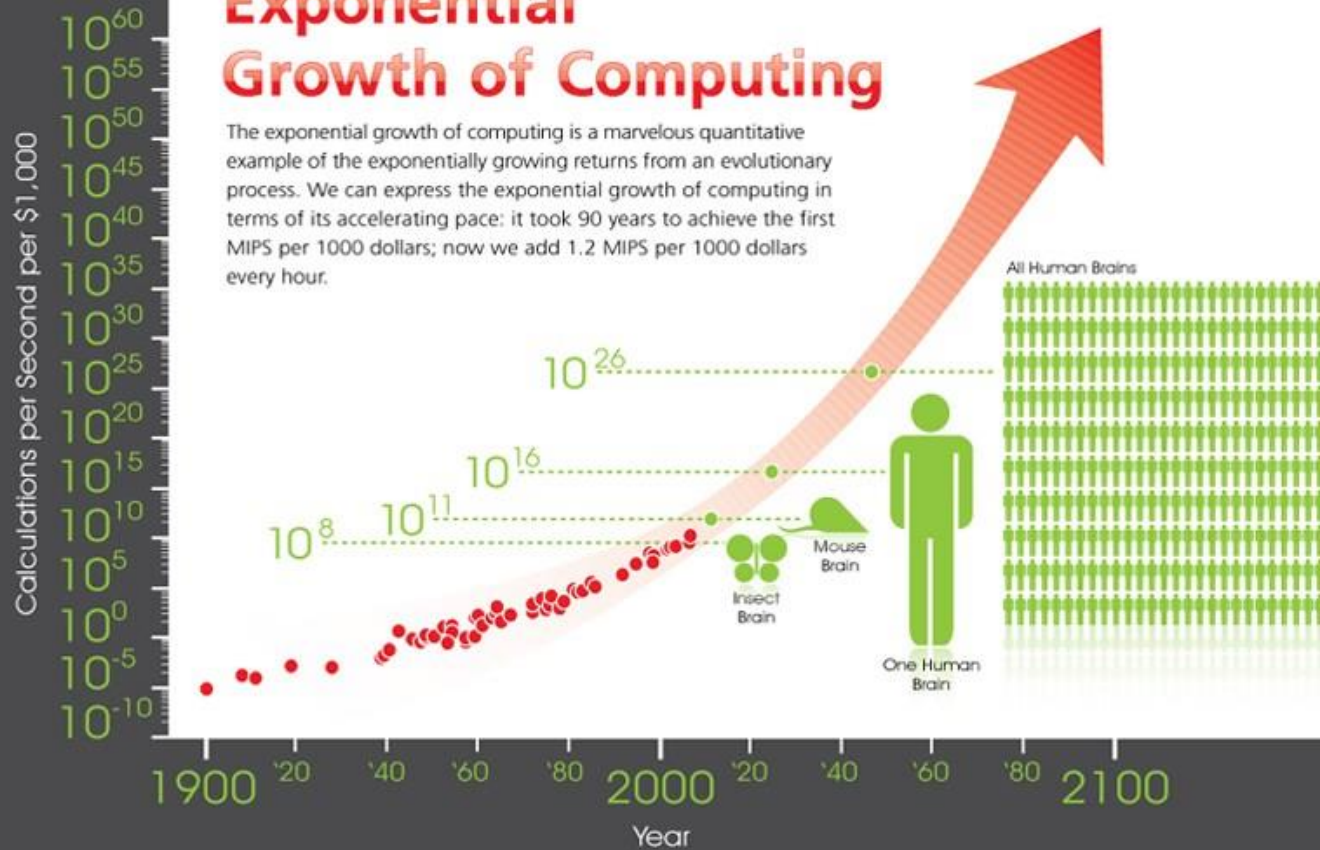


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# Exponential Growth of Computing

The exponential growth of computing is a marvelous quantitative example of the exponentially growing returns from an evolutionary process. We can express the exponential growth of computing in terms of its accelerating pace: it took 90 years to achieve the first MIPS per 1000 dollars; now we add 1.2 MIPS per 1000 dollars every hour.



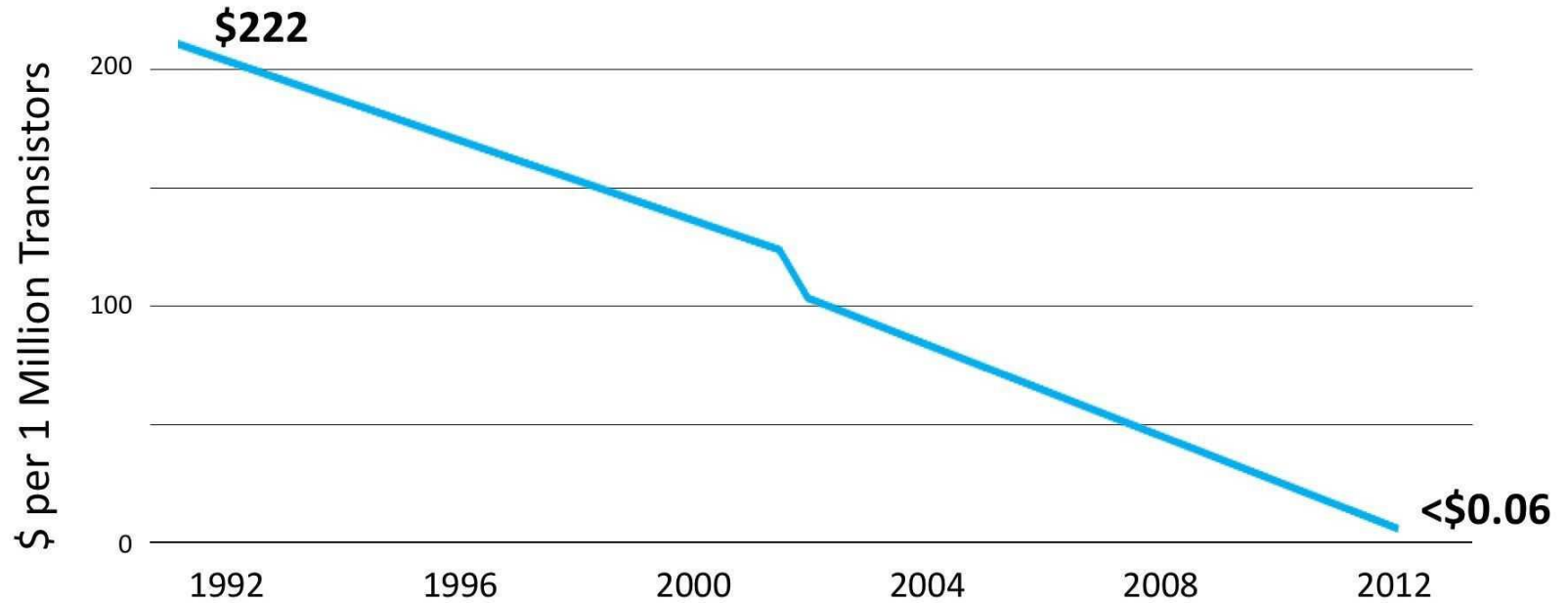
Source: Ray Kurzweil and KurzweilAI.net



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## Computing Cost-Performance (1992-2012)



Source: Deloitte University Press

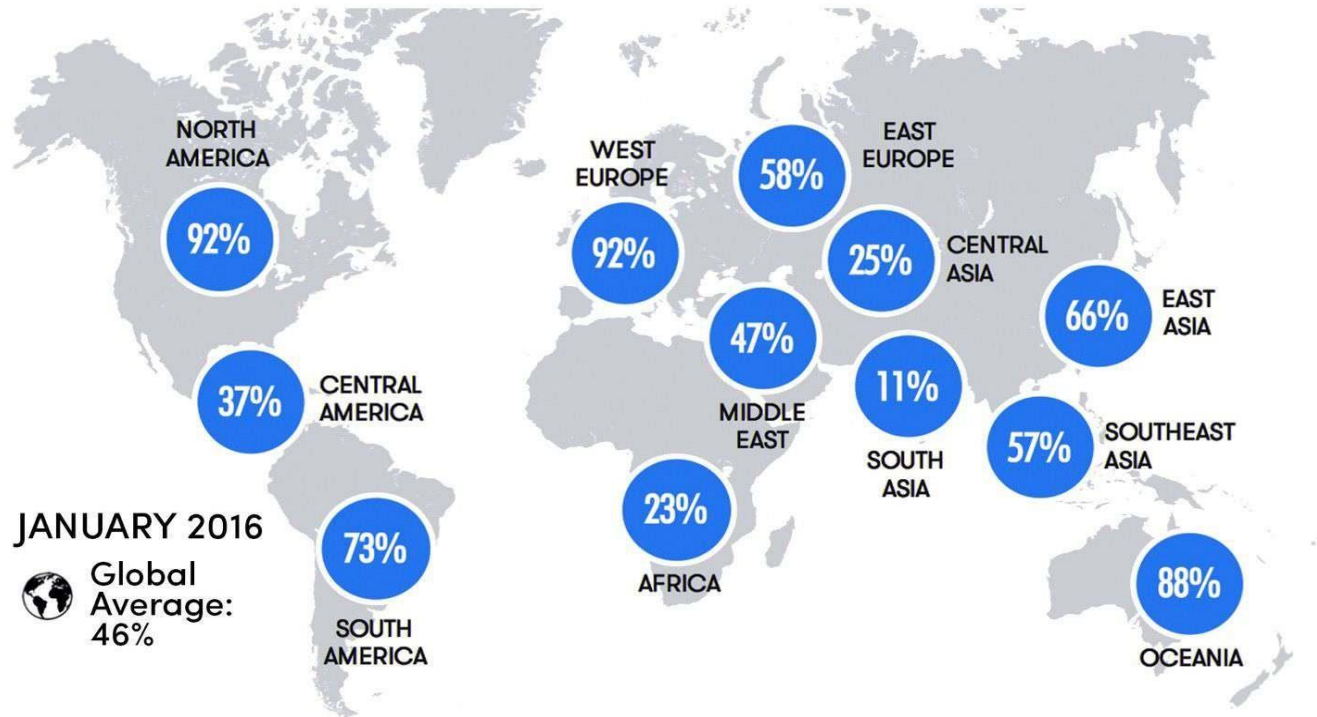


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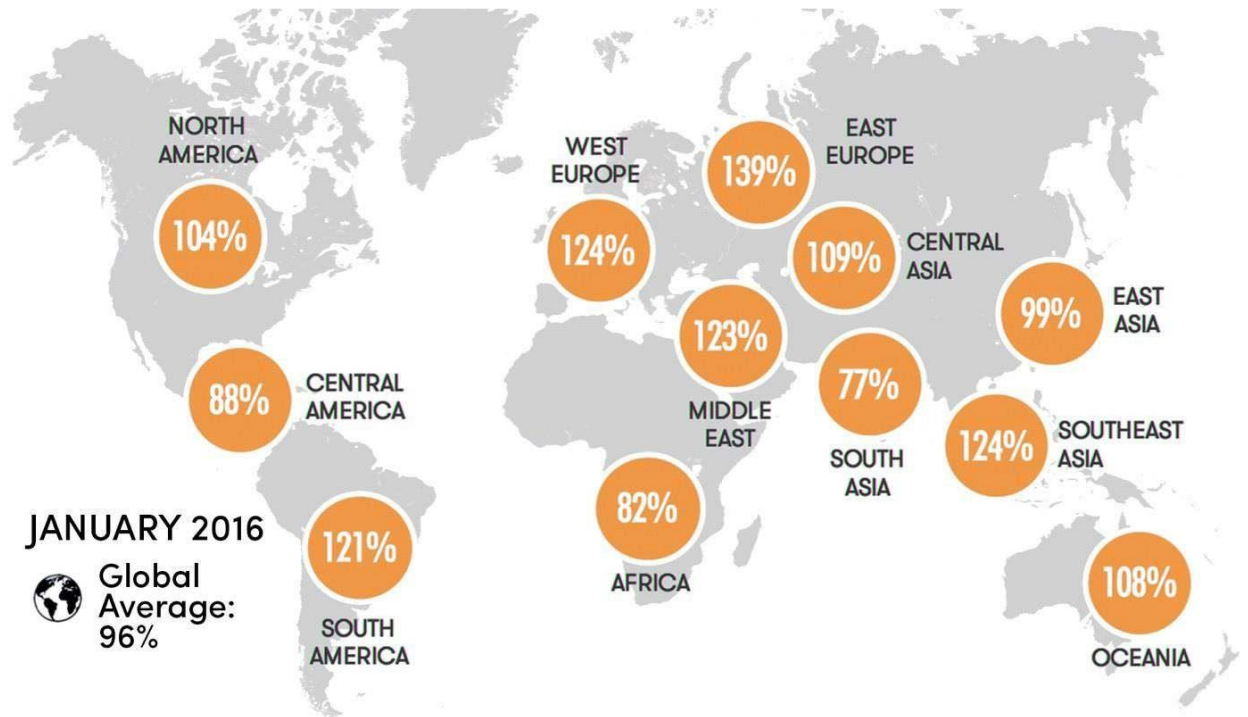
## Broadband Mobile Connections



Sources: GSMA Intelligence, UN, US Census Bureau for population data & We Are Social



## Mobile Connections Compared to Population



Sources: GSMA Intelligence, UN, US Census Bureau for population data & We Are Social



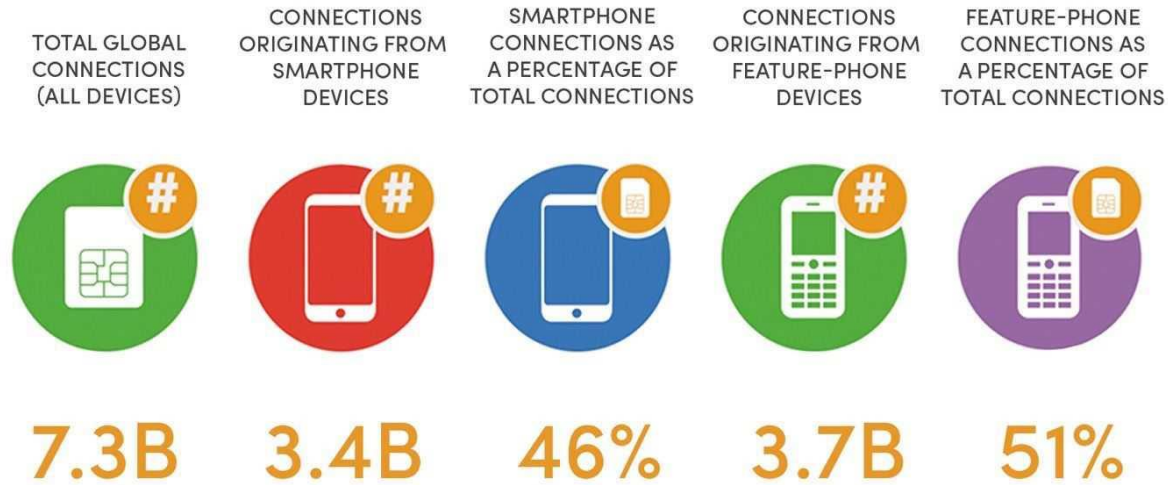
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## Mobile Connections By Device

JANUARY 2016



Sources: Ericsson Mobility Report Q3 2015 & We Are Social

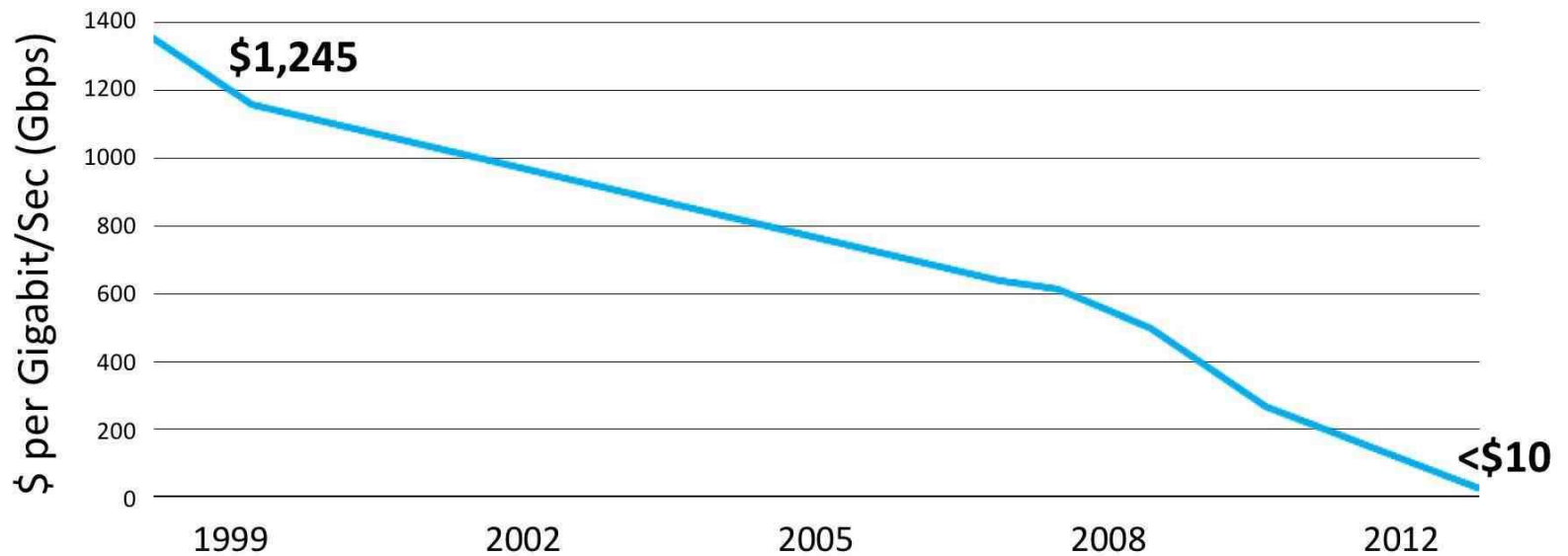
*Note: Other Devices such as tablets account for another 250 million connections (3.5% of total).*



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## Bandwidth Cost-Performance (1999-2012)



Source: Deloitte University Press

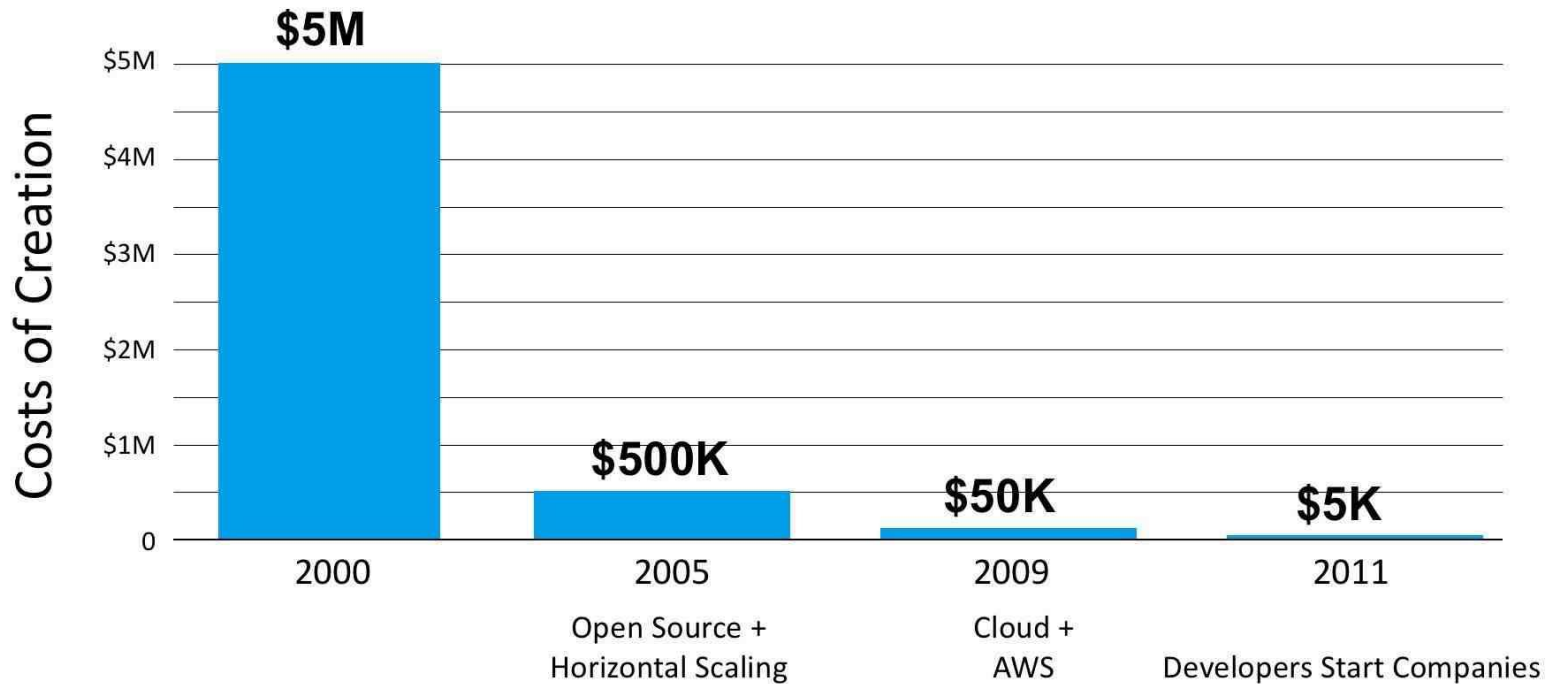


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# Cost to Launch an Internet Tech Startup



Source: Mark Suster



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# Exponential technologies

**exponentially** accelerating **technologies** are all on **exponential** growth curves, for instance:

- Network Sensors,
- Artificial Intelligence and Machine Learning
- Robotics,
- Biotechnology
- 3D Printing and Nanotechnologies
- Virtual and Augmented Reality
- Big Data



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# **Innovation-friendly business environments vs promoting R&D excellence**

**"Innovation is not just science and technology; it is also the creation of a multitude of new products and services in all sectors of the economy, new marketing methods and changes in the ways of organising businesses, in their business practices, workplace organisation and external relations"  
(OECD 2010).**

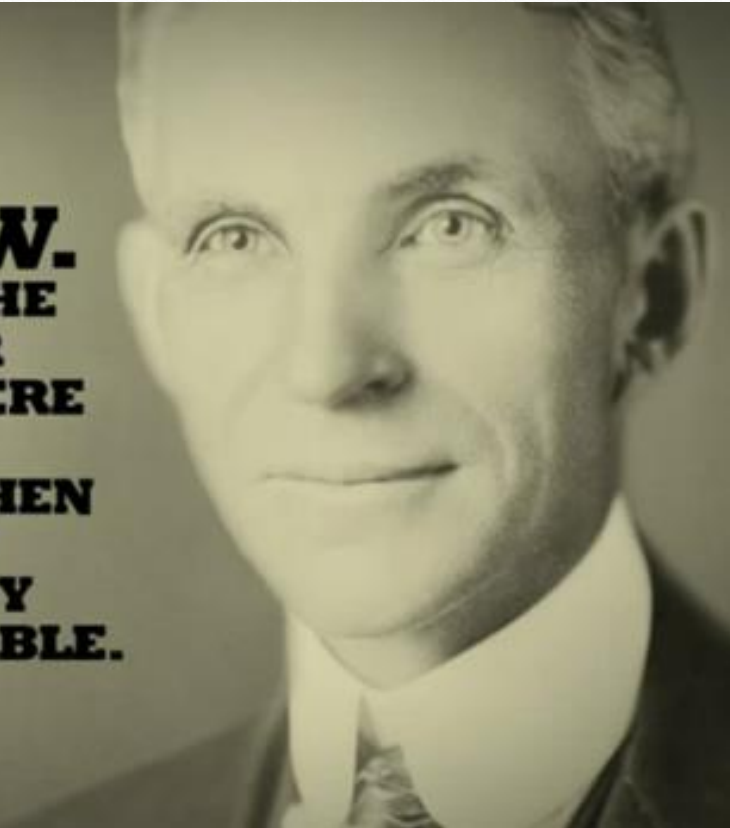


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**I INVENTED  
NOTHING NEW.  
I SIMPLY ASSEMBLED THE  
DISCOVERIES OF OTHER  
MEN BEHIND WHOM WERE  
CENTURIES OF WORK...  
PROGRESS HAPPENS WHEN  
ALL THE FACTORS THAT  
MAKE FOR IT ARE READY  
AND THEN IT IS INEVITABLE.**

**HENRY FORD**



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## **Regional innovation for most regions is more about:**

- **knowledge absorption - education and training, advanced business services**
- **and knowledge diffusion - technology transfer, ICT, entrepreneurship**

**...than about knowledge generation (science efforts)**



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## How to create better output from the regional support systems?



- Common regional vision and goals
- Common regional innovation strategy
- Harmonisation with local goals and strategies
- Very close involvement and commitment from the University and other talent providers
- Systematic development of bridges for commercialisation of research, knowledge and SME business development



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# Who prepares the Smart Specialization Strategy?

## The actors in an innovation system: "knowledge triangle" & "triple / quadruple helix"

- Enterprises (SMEs, micro, large, industry & services, creative industries, ...), including key innovators
- Research centres, universities
- Cluster initiatives, business networks ...
- NGOs, consumers / users ...
- Regional development agencies, financial, incubators ...
- National authorities and /or regional (from different departments: economics, research, education, environment, social ...), Managing Authorities ...



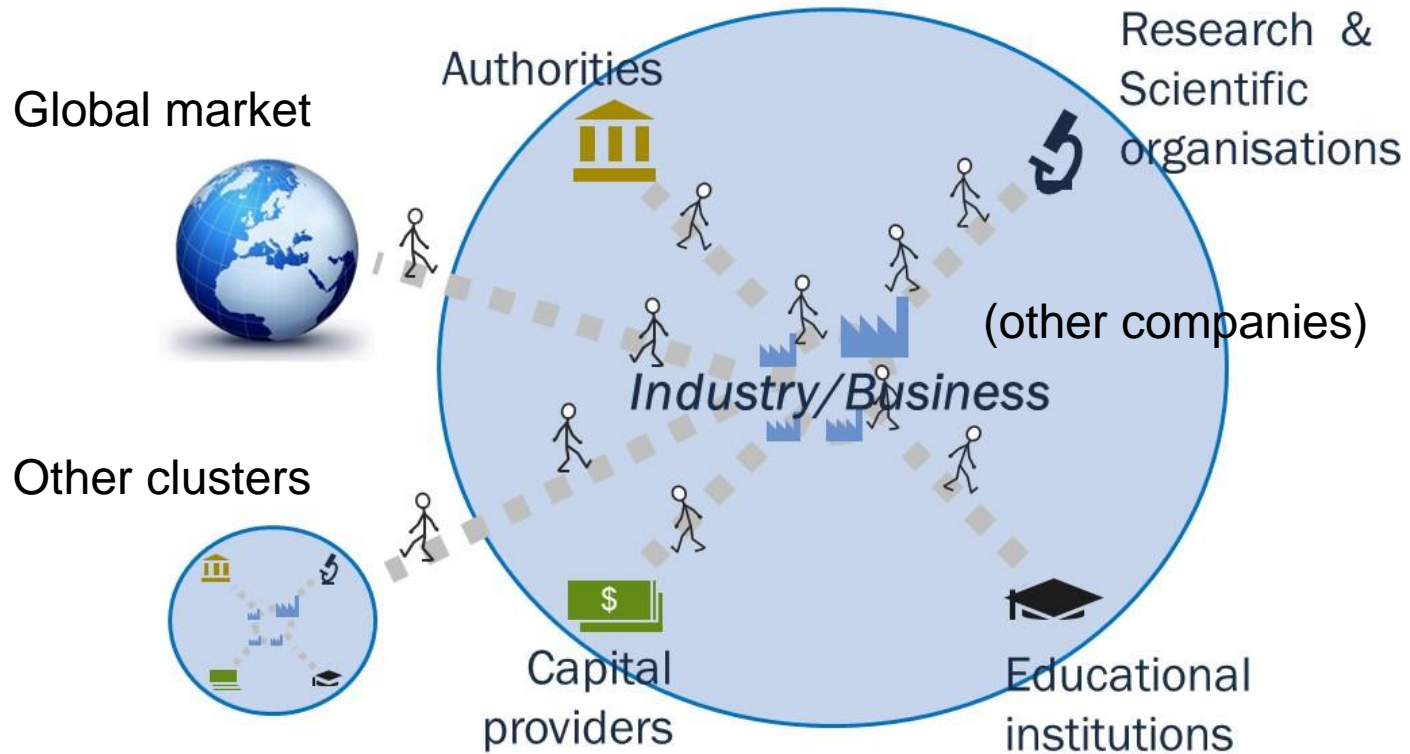
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Cohesion  
Policy





## The dream of dynamic clusters...



(Courtesy: Sövell & Lindquist, Stockholm School of Economics, 2012)



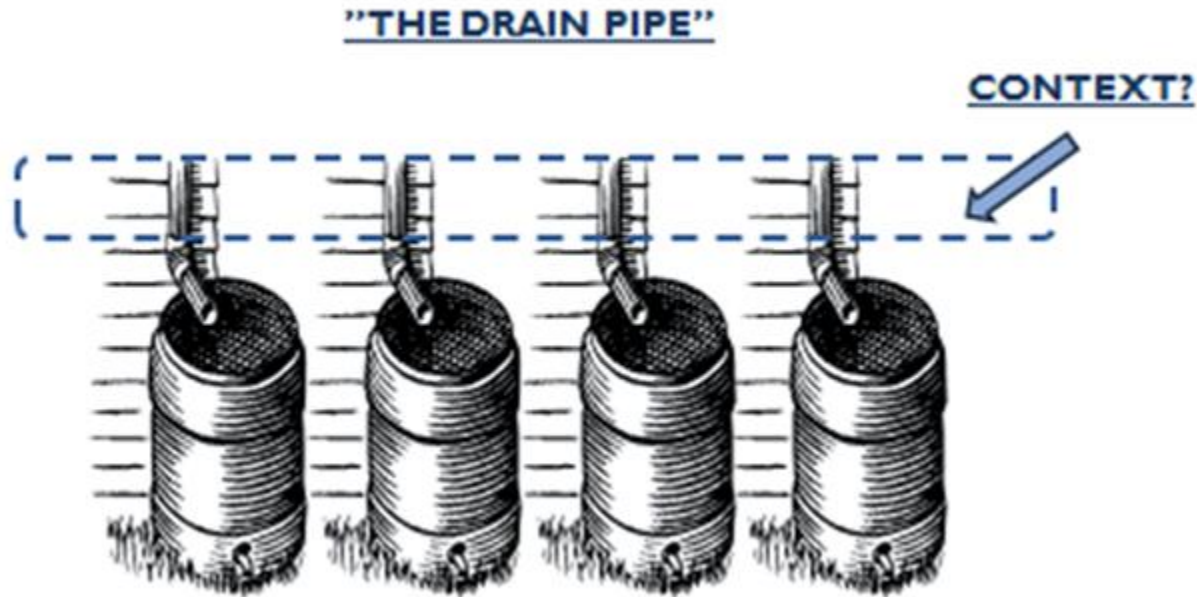
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# The "drain pipes"...

Successful development can never thrive on an organizational set up where the traditional institutional borders look like the drain pipes.

Instead, an open and innovative cross fertilization is the winning recipe. In summary: "**context management**" is a prerequisite.

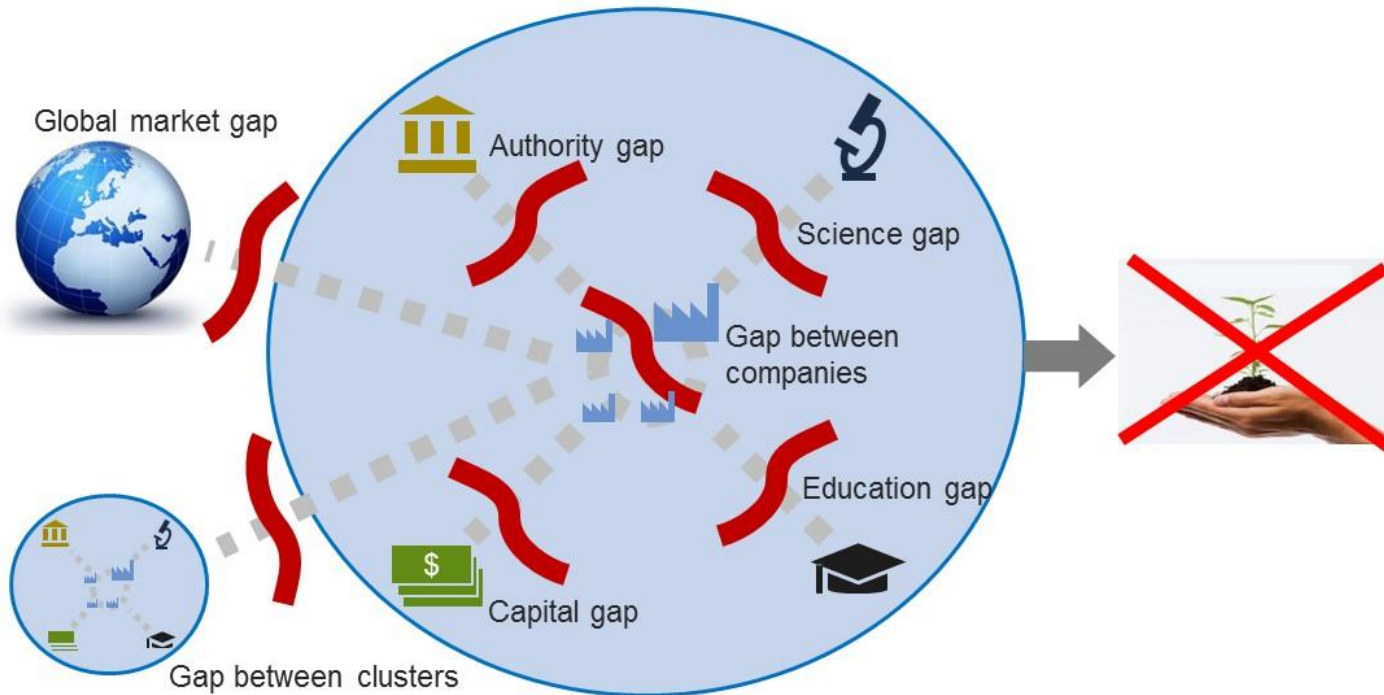


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...in reality, we find many severe gaps - the 7 innovations gaps...



(Courtesy: Sölvell & Lindquist, Stockholm School of Economics, 2012)



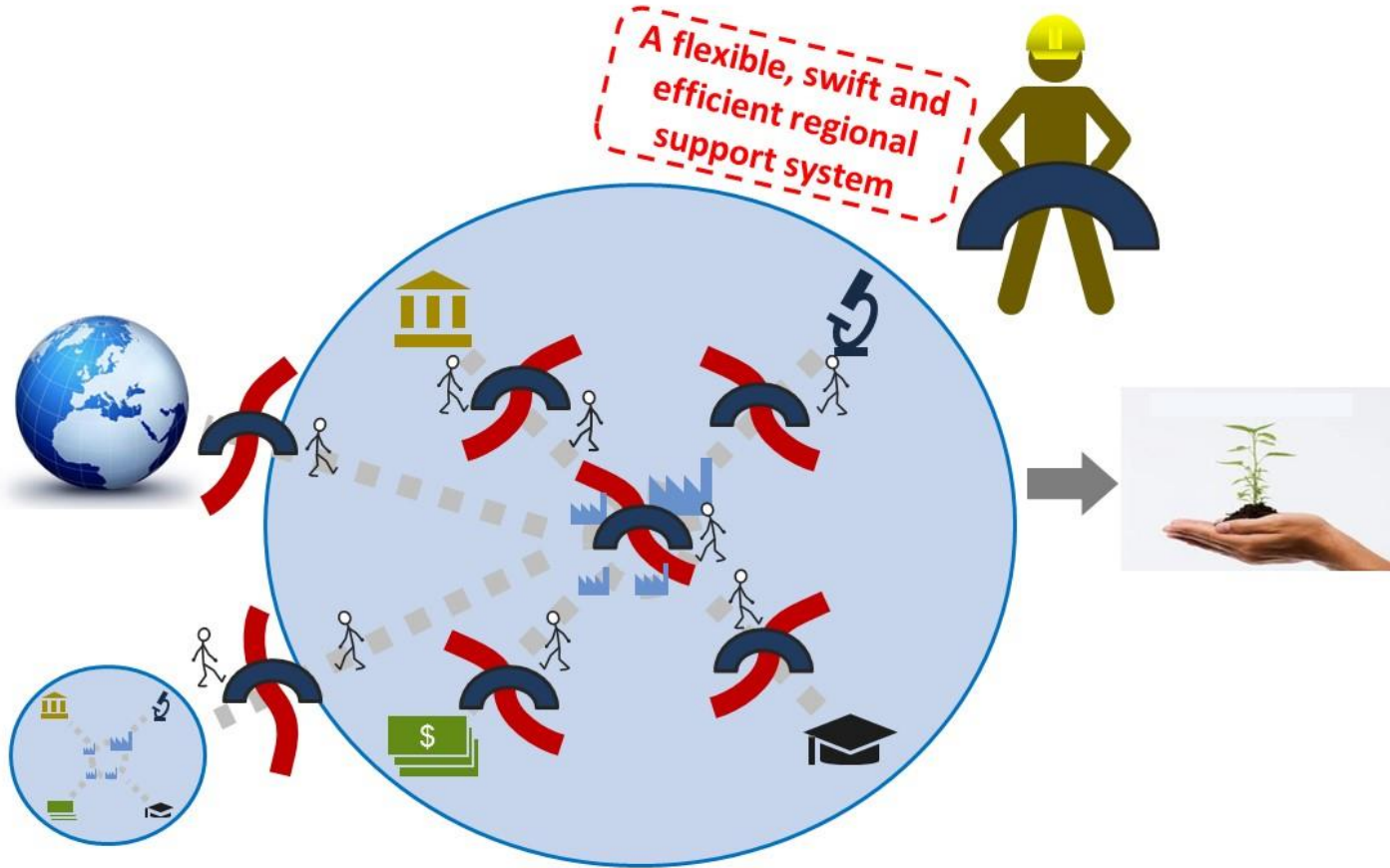
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# We need to create bridge builders to close the gaps



(Courtesy: Sölvell & Lindquist, Stockholm School of Economics, 2012)



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# Smart Specialization - back to Professor D. Foray

It is not a planning doctrine that would require a region to specialize in a particular set of industries.

It is an approach to policy that considers whether those activities already strong or showing promise for a region can benefit from R&D and innovation

Regions need to focus on certain domains but being focussed is not enough they need to focus by developing distinctive and original areas of specialisation (not by imitating each other)

Smart specialisation is largely about the policy process to select and prioritize fields or areas where a cluster of activities should be developed: let entrepreneurs discover the right domains of future specialisations

Collège du Management de la Technologie – CDM  
Chaire en Economie et Management de l'Innovation – CEMI



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# What does it mean for Non-EU States?

- Smart specialization is a concept applicable in any country or region on the globe acknowledging that they differ with respect to areas of strength and potential.
- It is about understanding and building on your own strengths and potentials in order to promote sustainable economic development in increasingly global and hypercompetitive world
- By making S3 an ex-ante conditionality EU just puts more focus and emphasis promotion of innovation and R&D policies in regions – it is a policy choice and a reflection on how much importance EU gives to S3 approach. Any country can make similar policy choice!
- Any country can apply it as it is more a set of mechanisms, tools and in general, approach to planning that focuses on how to systematically boost and promote innovation and R&D in countries and regions.





# What does it mean for Non-EU States?

- to support structural change and enable the emergence of new activity sectors or industries by investing in R&I in areas of strategic potential in the region
- regions should bring an outward-looking perspective to their strategies, to identify their niches and align their policies with other actors across the globe
- it allows countries and regions to be more responsive and react quicker to increasing pace of change
- it is very difficult and challenging long term process that requires on-going financial and political support – no quick solutions, results will be generated in mid to long term perspective



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# Is this a threat or an opportunity for less developed regions and countries?

Pool of global knowledge is growing rapidly - **opportunity** to stimulate new entrepreneurship (no 'catching up')

Impossible to concentrate all the knowledge and research activities in one place (institution, region or a country), global collaboration are needed – specialization presents the **opportunity** to contribute to research and education collaborations in respective areas

Smart specialization presents opens new **opportunities** to develop and **attract talent!**

Vision, organization and governance must be in place to utilize opportunities – research can be converted into GDP in close collaboration with economy and society

**World is rapidly changing! Business as usual or doing nothing are real threats to development!**



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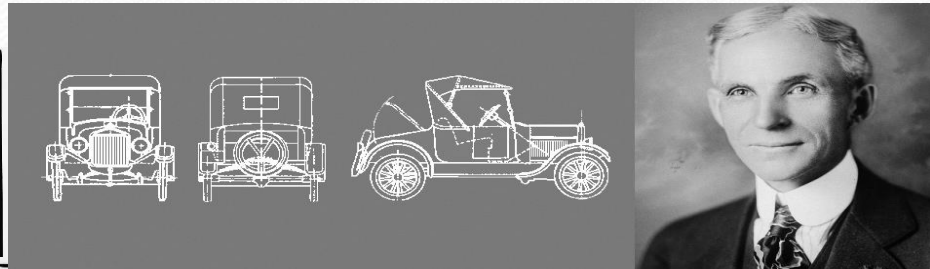




# From #1 to total decline Impact on cities

## Detroit

- home of automobile industry
- the elite American city that grew to 1.5 million by 1930



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# From #1 to total decline Impact on cities

## How Detroit looks today



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# From #1 to total decline Impact on cities

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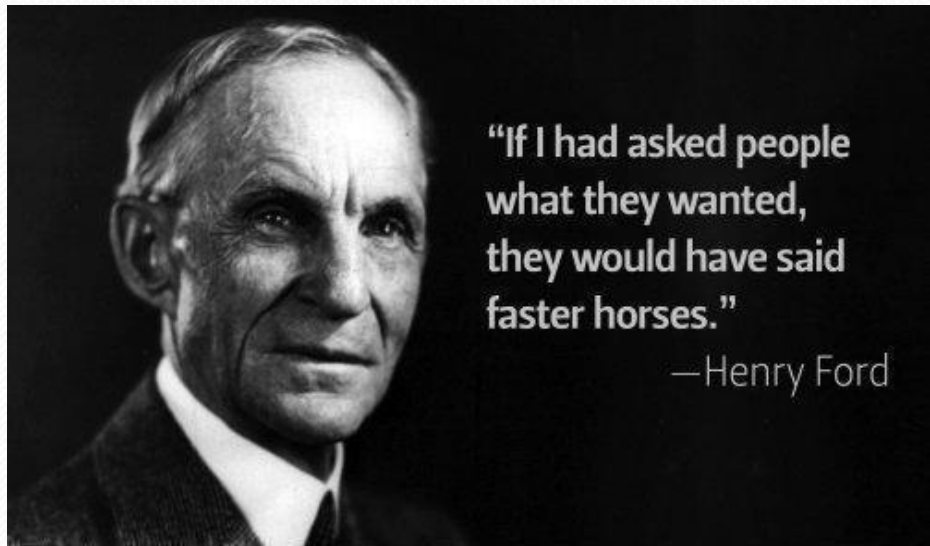


## From #1 to total decline Impact on cities

Detroit lost more than 25% of its population in first decade of 21st century only

Its population fell from highest 1.8 million 1950 to 700.000 in 2013.

### Effect of global competition



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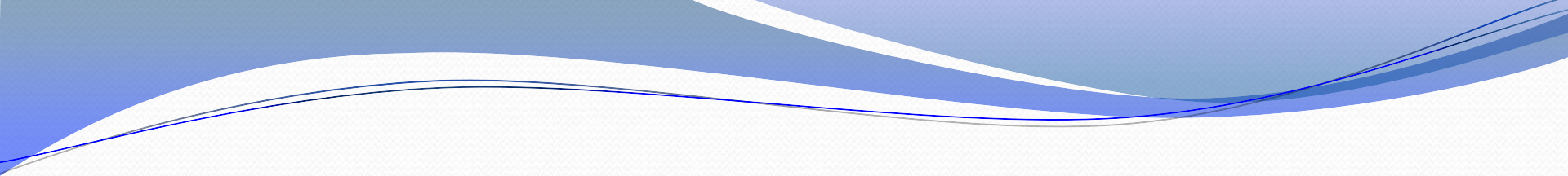
Thank you for your attention!

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