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INNOVATION THRIVES ON LOCAL HERITAGE

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Heritage, Tourism and Hospitality
International Conference 2015 (HTHIC2015)

Heritage Meets Innovation

Friday, November 27

Topics and claim

Focus: concrete innovation efforts by breakthrough startups/SME's in the Eindhoven Brainport region in the south of the Netherlands.

The problem: financial and commercial vulnerability of these startups

The cause: no-targeted financial support

Improvement suggestion: how to make the ecosystem supportive for startups/SME.

A dual approach

- The usage of hospitality concepts for reaching the own cluster towards to partners in other regions
- A refined approach for public funding.

Contents and structure of the presentation

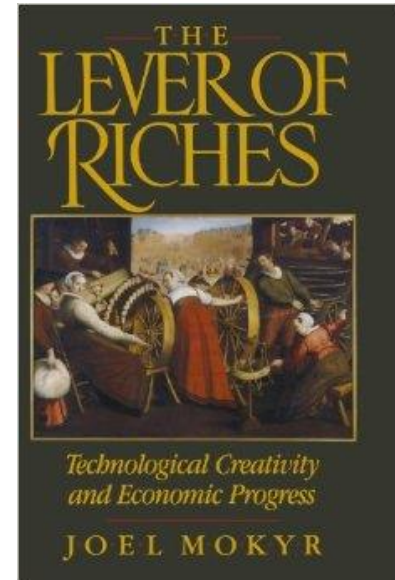
- Technology development: technology as a stranger
- Different kinds of companies are involved, each with their own administrative heritage
- The industrial context: regional clusters and network relationships → how to bridge spaces between regional differences.
- The institutional context: the level of centralization, state support, societal involvement and new narratives
- Directions for further study

The importance of technology breakthroughs

Technological developments the root of economic performance....an engine of growth→ they shape a nation's economy and employment. (Soete, Verspagen & ter Weel, 2010).

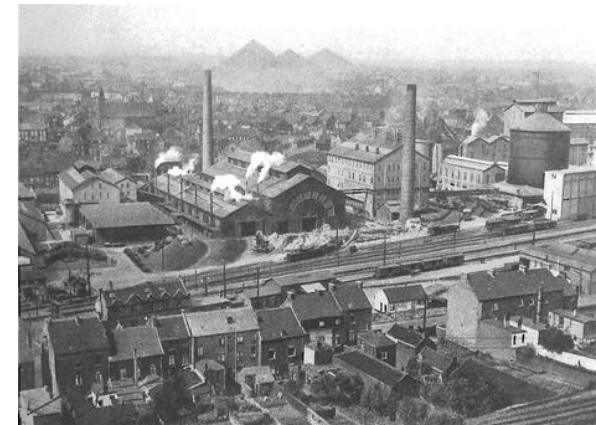
“Technology...the lever of riches”

- Joel Mokyr



“What made the factory successful in Britain was not the wish but the muscle: the machine and the engines. We do not have factories until these were available.”

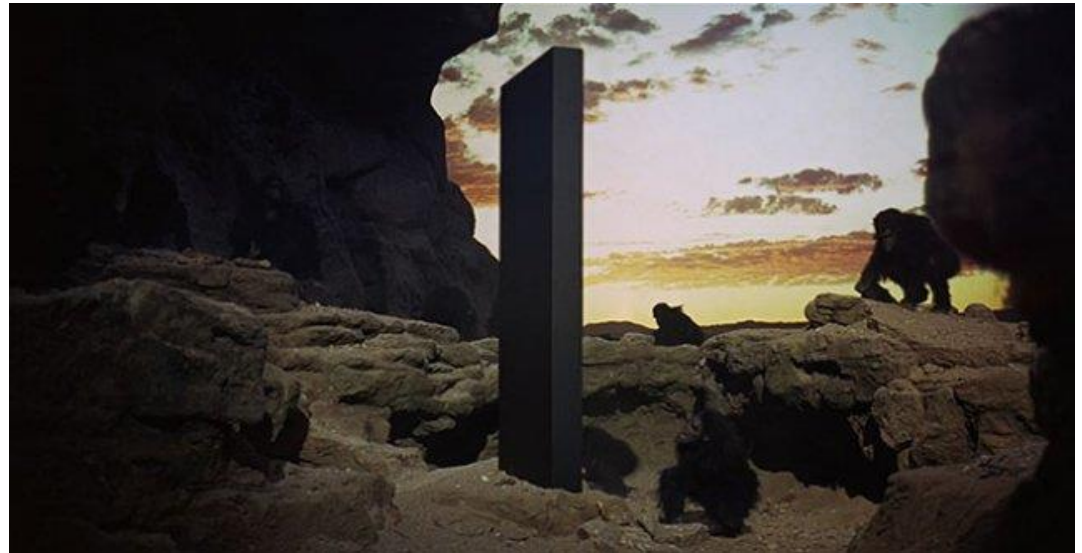
- Landes (Prometheus Unbound; The Wealth and Poverty of Nations)



The importance of technology breakthroughs

“Any sufficiently advanced technology is indistinguishable from magic.”

- Arthur C. Clarke (2001, a Space Odyssey)



“Technology isthe mother of civilizations, of arts and of sciences.”

- John Freeman Dyson

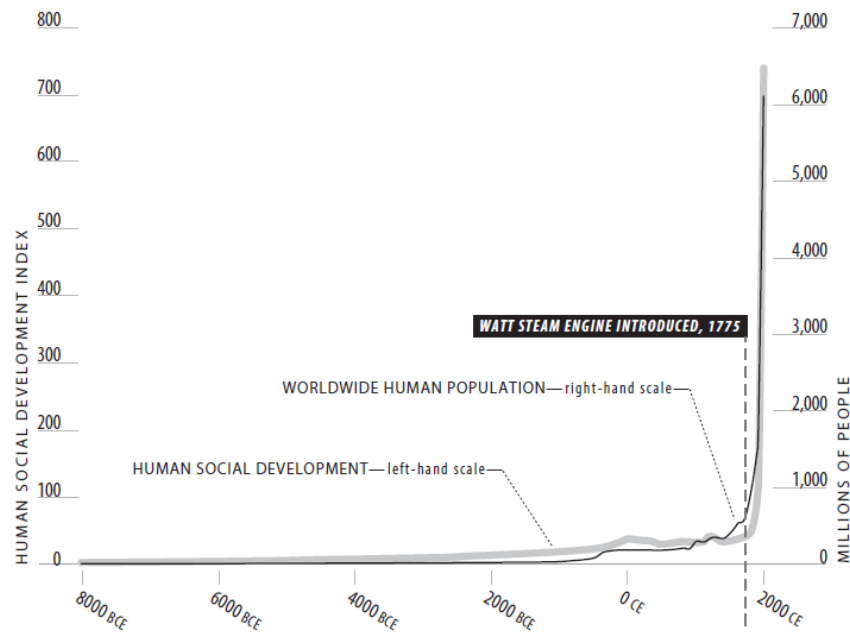
The importance of technology breakthroughs

Lipsey describes general purpose technology (GPT) that “initially has much scope for improvement and eventually comes to be widely used, to have many uses, and to have many ...technological complementarities.”

Examples:

- (1) The domestication of plants (9,000-8,000 BC).
- (2) The domestication of animals (8,500-7,500 BC).
- (3) Smelting of ore (8,000—7,000 BC).
- (4) The wheel (4,000-3,000 BC).
- (5) Writing (3400-3200 BC).
- (6) Bronze (2800 BC).
- (7) Iron (1200 BC).
- (8) The heavy plough (early middle ages).
- (9) The water wheel (early medieval period).
- (10) The three-masted sailing ship (15th century).
- (11) Printing (16th century).
- (12) The steam engine (late 18th century).

FIGURE 1.2 What Bent the Curve of Human History? The Industrial Revolution.



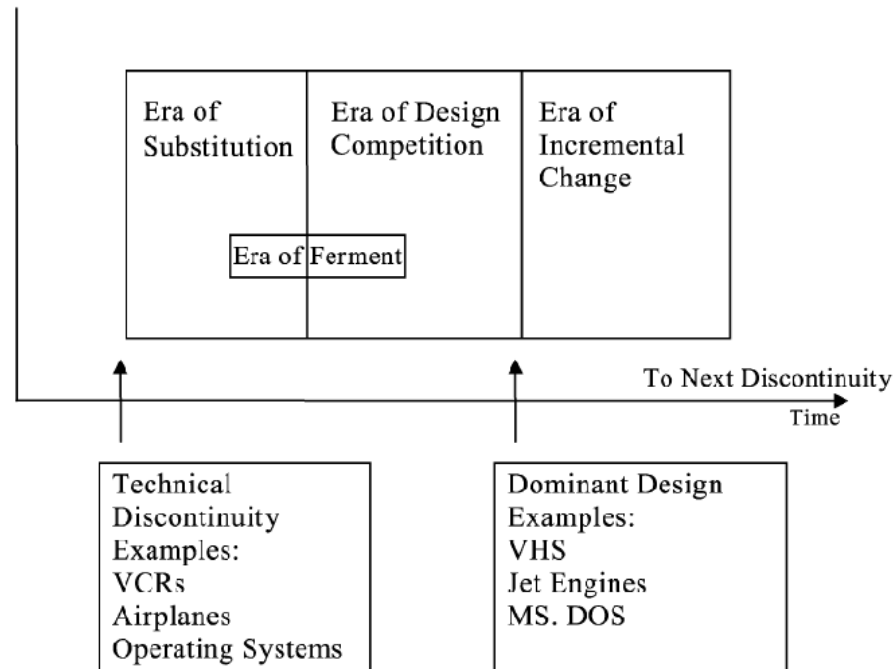
Derived from The Second Machine Age (Brynjolfsson & McAfee, 2014)

- 13) The factory system (late 18th century).
- 14) The railway (mid 19th century).
- 15) The iron steam ship (mid 19th century).
- 16) The internal combustion engine (late 19th century).
- 17) The dynamo to generate electricity (late 19th century).
- 18) The motor vehicle (20th century).
- (19) The airplane (20th century).
- (20) The mass production, continuous process, factory (20th century).
- (21) The computer (20th century).
- (22) Lean production – Japan – Kanban, Just-in-time, Quality, zero-waste (20th century).
- (23) The Internet (20th century).
- (24) Biotechnology (20th century).
- (25) Nanotechnology (sometime in the 21st century).

The importance of technology breakthroughs

Tushman and Anderson (1986, 1990) separated radical (breakthrough) innovations from incremental technical innovations.

284 K.A. Munir, N. Phillips / Journal of High Technology Management Research 13 (2002) 279–297



We follow Ciborra's perspective (1999) who claims that the **new technology should be typified as a 'stranger' or 'guest'** who has a regular need of temporary support. This requires for tinkering (trial and error; bricolage).

Companies – creators of innovation

We turn to breakthrough innovations caused by start-ups, and more generally SME companies, because they are main providers of possible breakthrough innovations (Almeida).

- **New entrants** can have a large advantage if the innovation is radical because they will not need to change their knowledge background.

Main problem: in the era of ferment, specific products are not yet discernable....no sales!

- **Large, on-going companies (incumbents)** may be in a better position if the innovation is incremental since they can use existing knowledge and resources to leverage the whole process.

Companies – creators of innovation

In essence, companies have a history more aimed at research (with radical technical developments), or focus at production & marketing with incremental technological improvements. This history is known as their administrative heritage (Bartlett and Ghoshal, 1989).

- This heritage is that **part of the past which companies select in the present for contemporary purposes**, whether they be economic or cultural.
- It is concerned with the ways in which very selective material **artefacts, memories and traditions** become resources for the present.
- Thus, heritage can be **visualized as a resource** (Graham 2002).

Companies – creators of innovation

Howard Schultz recognized as he began to deal with Starbucks's identity crisis in 2008 that they had to strike a delicate balance between heritage and innovation.



*"Whether your organization is a business or not, you have to **continuously innovate** in order to keep your vision **relevant to the outside world** – the **organization's heritage could be of great help** in doing so. We have to begin by asking, "What is Truth (for us) and what is habit?" **Truths are maintained** (Collins & Porras – values are maintained). **Habits can be adapted** (Collins & Porras – goals can be adapted)."*

Despite the fact that **high-tech start-ups** are very **important for economic growth**, studies suggest that this is caused by a small number of very high-growth start-ups (Autio E. and A. Lumme, 1998, p. 52).

Start ups need to apply a financial model based on venture capital, state support and loans, which makes them financially vulnerable. So, **many innovative start-ups** never grow successful because they **lack access to capital**.

Jansen (2015) warns that the **percentage of high-growth companies decreases**, partly due the recent crisis but very much because of lack of investments and qualified staff.

The problem

- What makes it difficult for investors to assess the future success of startups, is that early in the growth cycle, small businesses typically do not have audited financial statements. For such firms, outsiders often **put weight on the creditworthiness and reputation of the entrepreneur**, that is easier to evaluate than the records of the firm (Berger and Udell 1998).
- We have gathered data from two cases in the sectors of Solar Technology and Health Care Robots to get an better understanding of this vulnerability, in orde to suggest venues for improvement.

Clusters and campuses

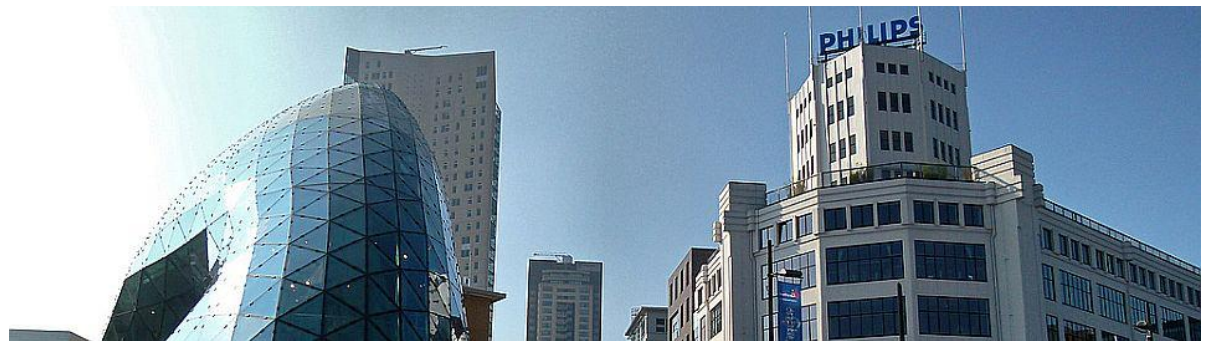
- SME's have a hard time to bridge the valley of death towards marketing.
- They need **protected spaces (niches or ecosystems) to experiment with technology**, develop user practices and regulatory structures. (Schot & Geels, 2008).
- Therefore, they seek embedment to avoid working autonomously, to be part of a eco-system with relationships with local and regional actors (also financial partners).

Clusters and campuses

- Regional clustering is an important vehicle for cooperation because of its **geographical proximity**.
 - This enables **learning processes** between users and producers.
 - The system is the result of interactive processes of actors at the individual level, guided by market factors and non-market factors such as **governments, universities and societal groups that result from historical developments**. (Soete, Verspagen & ter Weel, 2010)
- Regional heritage, in the form of social and cultural aspects, **facilitates collective action** for mutual benefit. (Asheim, 2011).

- Brainport region: a very proliferated High-Tech and Design heritage stems from a century of technology-based companies (Philips, DAF).

Every year the famous Dutch Design Week (DDW) is held in Eindhoven in the previous factory buildings of Philips on the industrial site Strijp S. This site of industrial heritage, has been converted into a vital and attractive area for working (design and tech start-ups), living and going out after Philips gradually stopped her production activities or moved them to lower wages countries.



- By heritage the area is strong in science, research and make industry but weaker in marketing, finance and trade.

Clusters and campuses

Campuses have recently received much attention (“De Ingenieur”, 2015).

- They offer that **proximity and the opportunity to meet people** working in the same field and to work with universities because start-up campuses are mostly located close to universities.
- High Tech Campus (location: former Philips Natlab)



Clusters and campuses

- Colocation offer opportunities to **governmental institutions** to efficiently communicate **with sectoral clusters** and individual companies and to provide support to them and governments are eager to utilize this opportunity.
- Local networks and campuses provide great opportunities to build **horizontal programs and projects** in which major companies, SMEs and academia cooperate. And because projects are the most important vehicle for research and development, they are in fact the tool that brings people together and are the blood that brings 'vitamins and nutrients' to the far corners of the network.

Network cooperation

But there is also a flipside to this cluster approach.

- Firms in a cluster need to develop different capabilities in later stages of the industry life cycle to avoid **the risk of cognitive lock-in**. Too much social capital **may block radical innovations** (Engstrand & Stam, 2002).

So, the ecosystem may, however, not offer all **supportive competences** (Richardson) that a small-scale breakthrough company requires so they **must reach for network partners in other regions**.

- As a consequence, the role of sectoral networks is not to be underestimated. A broader cooperation is important to absorb complementary competences. (Van de Wal & Boschma 2011).
- Such an effort to partners outside the own ecosystem asks for new competences that are related with **'the encounter with a stranger'**. In **hospitality studies**, this is a common theme that can be applied in network studies for innovation.

Network cooperation

A successful encounter between professionals of different contexts is the key for effective colliding and mixing ideas and finding (financial) support.

Global networks deal with the issues of bridging geographical distances but for cooperation also the other distances need to be bridged, namely informational, intellectual and social.

Hospitality may be applied to bridge these mental spaces – it has moved beyond the physical space and affords people to be hosted along the continuum of four worlds (Go and van Fenema, 2006).

Network cooperation

Table 1 Connecting spaces

	Material space	Information space	Mind space	Social space
Material space	Co-presence of people and material artifacts	Capturing and representing material space (picture)	Executing the design of an artifact	Co-presence of people
Information space		Joining together information spaces (hyperlinked web sites, web ring, picture-in-picture TV)	Articulating a mind space in information artifacts	Mediated co-presence of people
Mind space			Connecting mind spaces (people-people, people-machines, machines-machines)	Collective thinking
Social space				Connecting social networks (boundary liaison (Burt 1993))

These spaces have to be crossed to find and apply external competences of marketing, finance and trade.

Institutional context

- Although technology is the biggest factor behind productivity growth, it requires institutions such as a state, education, culture, finance, etc. (Nelson and Sampat, 2001).
- The role of institutions is therefore crucial knowledge to understand how technologies developed and markets of innovative products are shaped (North).

Institutional context

Centralization vs decentralization: cooperation models

- Capitalism is shifting from a focus on mass production to offerings customized for individuals (Rifkin).

Societal involvement

- Social norms and regulations shift if new technology is introduced (Frenken). For instance, privacy norms and the diffusion of internet behavior are intertwined.
- Local communities come up (Samso Denmark – renewable energy island)

Institutional context

The role of the state – our main focus

- Fligstein (1990) argues how societal and economic developments time and again determine a changing context for that defines legal corporate behavior. Laws concerning taxes, subsidies and regulations are policy instruments to do so.
- In “Why nations fail”, Acemoglu and Robinson (2012) explain that inclusive institutions with restrained elites offer new actors the space and means to participate and gain. One of the means is finance, a perpetual problem for small, starting firm.

Institutional context

The role of the state – financial support

Mazzucato claims that US Governments have always invested heavily in promoting the spread of existing technologies such as the railways (by giving the rail barons free land) and in seeking potentially lucrative scientific breakthroughs (by financing almost 60% of basic research).

Defense Agency (DARPA) was for instance the supporter of the internet, GPS technology and advanced robots.

Therefore the state has played a central role in producing game-changing breakthroughs. If the government / big companies do not support promising startups long enough, then they will not survive; foreign actors will take the stage or the transition to a new technology will have serious delays.

Institutional context

The role of the state – financial support

- **The Netherlands have a medium position in total R&D spending** Besides, the share of public R&D expenditures in GDP is relatively low in the Brainport region: 0.07% for government research expenditures and 0.27% for research expenditures at universities. This is way below both the national and EU public research intensity. For many years the region celebrated the good performance in business R&D and did not really mind the low public R&D expenditures.
- More importantly, these **spending does not reach the relevant start-ups/SME's**. That problem is now acknowledged (Start-up Delta).

Institutional context

The role of the state – financial support

- **We conclude that startups are in a financial grey area where more collaboration is possible and required between investors, the state and banks,** for instance in order to reach earlier risk assessment. (ING 2014).
- **Breakthrough development by start-ups is not sufficient attractive to investors, but governments do not bridge the gap,** not with subsidies nor with launching customer ships. In our experience, state bodies are not yet able to 'picking winners'.

The role of the state – financial support

- Only if state actors provide **targeted support to promising start-ups**, they have the cash flow to survive for several years and become attractive for 'risk investors'.
- However, empirical evidence that suggests positive effects of various programmes are, at best, rather small (Radicic). A picking-winners strategy of funding actors may invite risk-averse behavior at possible receiving companies (they may temporarily furbish and polish so-called key indicators). So it cannot be the only indicator.

A selection mechanism for public investors to support promising entrepreneurial efforts of SMEs may take into account the past performance of the SME and/or entrepreneur (Berg & Udell; Rathenau Institute, Deventer & Mambo (2008); Feenev et al. 1999).

Cultural context (meaning and narratives)

“Cultural artifacts...are powerful symbolic means of communication...to build organizational commitment, convey a philosophy of management, rationalize and legitimate activity, motivate personnel, and facilitate socialization” (Smirich, 1983, p. 345).

Organizational culture is viewed as a lever for transition.

Conclusion and question for discussion

Regional-based breakthrough SME's/startups may lever their innovation ability by a dual approach:

- By enriching their heritage-based competences with experiences and competences from partners of different regions. A successful encounter between professionals of different contexts is the key for effective colliding and mixing ideas.
- This requires hospitality but only works in an ecosystem (including public partners) that grants promising startups a solid financial position.

Our main question to you

What options do you see to attract targeted investments, in order to capitalize startups /SME within their own, and from other ecosystems?

- The **competitive performance narrative** driven by continuous productivity gains caused by innovations of the present economic and institutional system;
- Aligning with stakeholders: incumbent companies receiving large subsidies, powers that be (establishment), contemporary state authorities backed by civil servants, cultural symbols → solid structures and controlled development

OR.....AND?

- the **cooperative narrative** diffusing the notion that technological solutions can be developed and brought to productivity through newer institutional developments which foster corporate and community collaborative efforts while nurturing behavioral change of users.
- Aligning with stakeholders: civil society, special interest groups, local authorities, user/future customer groups, microfinance, cultural symbols → evolving and transitional changes, organic approach