

At best innovation policy creates interpretive spaces

- Sheltered spaces for collective search, experimentation and interpretation
 - where fears of the risk of private appropriation of information do not disrupt the open-ended futures-oriented conversations (Lester & Piore 2004)
 - where collective sense-making is possible (learning new vocabulary, thinking, partners, etc.)
 - where one is not only learning to innovate or detecting system failures but is enabled to seek futures with relevant partners (and to find relevant partners)

Platform approach

(Asheim, Boschma & Cooke, 2011; Ailisto et al 2016)

- Focuses on making connections between different but related activities
 - Represents a strategy based on related variety for **diversification**
 - Related variety is defined on the basis of shared and complementary knowledge bases and competences
- Meeting points for different needs
 - Network effects
 - Multi-way interaction

News 21.4.2015 15:45 | updated 21.4.2015 15:45

Metsä Group to build next-gen bioproduct mill – to make pulp, products, power

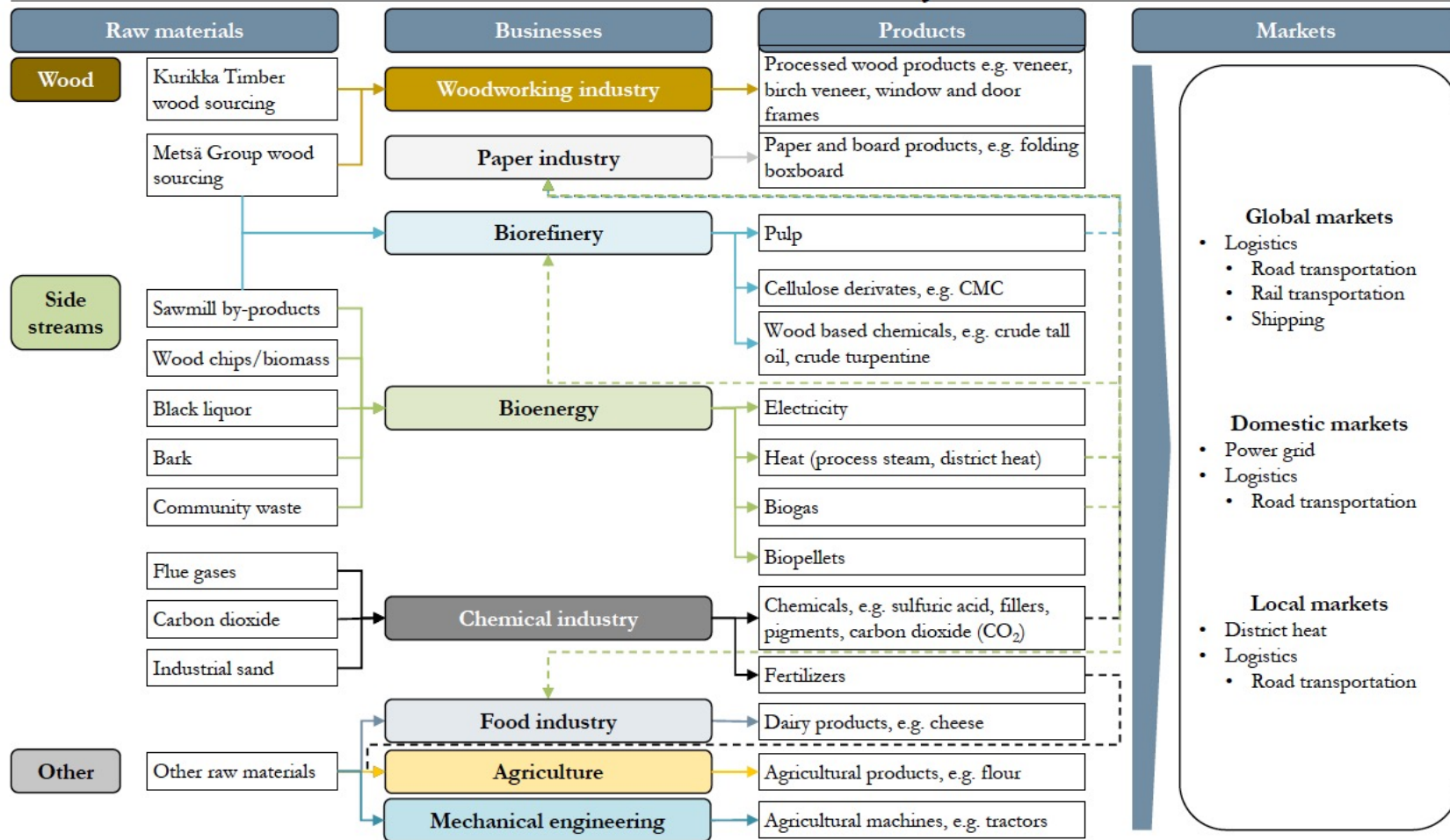
Metsä Group has announced it will build a next-generation bioproduct mill in Äänekoski. Building the new bio-friendly mill, which will produce pulp – and twice the energy it requires – will cost Metsä about 1.2 billion euros. The investment is said to be the largest-ever by the forest industry in Finland – and the world's largest softwood pulp mill.



How Metsä Fibre pulp mill looks these days, before the planned next-generation mill which is projected to be complete towards the end of 2017. Image: Metsä Group



Äänekoski – Industrial Business Ecosystem





The geography of knowledge dynamics



Customised innovation policy

- No 'one size fit for all' formula for promoting innovativeness - not even among the Nordic countries (Asheim et al 2011)
- Innovation policies and practices do not vary only between countries but also within them (Tödling & Trippel 2005)
- Unique advantages have to be actively constructed and innovation policies customised

Localized / regionalized innovation policy

Localized and/or regionalized innovation policies may have some advantages in solving specific issues.

- National innovation policies have a regional impact - intended or not
- Regional differences...
 - in the quantity and quality of innovation activity
 - in the performance of the entire regional innovation system
 - in the institutions/practices framing the action and choices made in the region

Differentiated strategies and instruments are needed both to serve the specific regions and to achieve national-level goals more effectively.

Localized / regionalized innovation policy in Finland

- Regions are usually poorly, if at all, defined in the Finnish **national** innovation policies.
- Regional innovation policy is, more or less, seen as an extension of national policies (Suorsa 2007)
- Due to strong local government national and local policies have coevolved for some time (Sotarauta & Kautonen 2007)

Differing regions / differing local systems

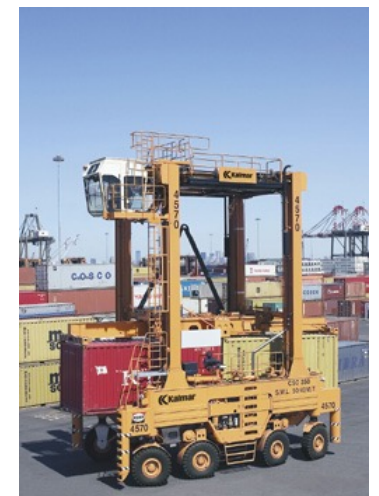
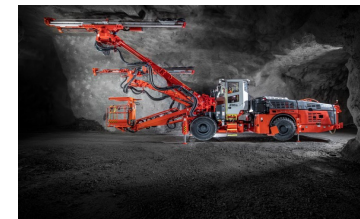
- Peripheral regions (organizational thinness)
South Ostrobothnia
- Old industrial areas (potential lock-in)
Tampere region
- Metropolitan regions (fragmentation)
Helsinki MA



Solid engineering is the name of the innovation game

Mobile heavy machinery in Tampere

- Adding 'intelligence' to traditional machines
- Customized production for individual customers
 - Products are a mixture of solutions and industrial services
- New knowledge from on-the-site, face-to-face and hands on interactive processes with customers
- Solid and long-term innovation work
- The majority of the firms have a separate R&D unit



The main source of knowledge is
customers
Also universities



The core of the local innovation policy
Customized and collaborative

Mobile heavy machinery in Tampere

- Proactive collaborative strategy
- Maintaining and increasing R&D intensity (generic technology focus)
 - Main focus on 'applied basic research'
 - Conscious efforts to tap into international knowledge hubs
 - University highly involved





Solid engineering is the name of the innovation game

Agrotechnology in South Ostrobothnia

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The main source of knowledge is **customers**



Customized proactive and collaborative strategy

AgroTech – catching up learning for innovation

Proactive collaborative strategy

- Increasing innovation capacity and culture – learning to innovate
- Tapping into national knowledge hubs
- Simultaneously very customized to serve the cluster and generic to serve regional development more broadly
- Usability and customer-orientation important
- Distributed activity, experimentation (Agro Living Lab)





Restless dynamism is the name of the innovation game

DigiBusiness in HMA

- Digi businesses are evolving rapidly and accumulating in many ways
- Constant search of new business ideas as well as new customer groups and novel forms of digital media
- Customized production for individual customers
- The minority of the digibusiness firms have a separate R&D unit
- A wide set of professional and user communities involved





Restless dynamism is the name of the innovation game

DigiBusiness in HMA

- Identified business opportunities are tested rapidly and incorporated into the existing service portfolio of a firm
- Branding the service or product and hosting visible references from various...
 - Design, brands, trademarks, social media references etc.
- Extensive use of the Internet and other digital channels to stay in touch with a rapidly developing field



The main source of knowledge is **customers** and **competitors**



Customized gardening strategy

DigiBusiness in Helsinki - making sense of rapidly evolving field

- “360 degree strategy”
- Simultaneously customized and generic
- Creation of awareness of rapidly emerging industry, reduction of fragmentation
- Real-life experimentation (living labs)
- Universities loosely connected
- Reactive gardening policy

‘360 degree strategy’

- Loose focus
- Don’t know what to focus on, experiment with everything interesting to find a new path
- Loosely defined policies, space for experimentation and rapid reaction – collective learning
- Focus on growth-oriented SMEs and boosting interaction between SMEs and large firms





Customized gardening strategy

”Just as nature conducts many evolutionary experiments in order to have a successful species, so companies should fund many innovation projects and see which ones win out”

(Välikangas & Hamel 2003)



The Roles of Universities

Many roles

- Universities are different
- Disciplines are different
- Regions and cities are different
- Countries are different

→ No one size fit all model

- Academic science and universities have become increasingly entrepreneurial
- It is an imperative to raise funds for a research group – internal pressure to engage – tensions between academic excellence and societal relevance



Models

- Entrepreneurial University
- Triple helix
- Civic university
- Engaged university - scholarship of engagement, stewardship of place
- Regional Innovation Systems
- New Production of Knowledge (Mode 2 knowledge)



The concept of knowledge-based regional economic development is derived from activities of the New England Council, representing academic, business and political leaders. Based on the formation of firms from research at MIT in the 1920s, MIT President Karl Compton proposed to utilize the region's comparative advantage, its extensive academic base, systematically to create new firms from scientific research. In the 1930s, New England business and political leaders were open to new ideas, given the failure of traditional business models of regional development.

(Jacob & Helsström 2000)

The Triple Helix Model

(Etzkowitz & Leydesdorff 1997; Etzkowitz 2008)

A popular approach for understanding how the dynamic interaction between 'the three institutional spheres' (universities, industries and government) fosters entrepreneurship, innovation and economic growth

Key assumptions

- Universities are playing a central role in innovation side by side with industries and governments
- While earlier innovation policy was to a large extent designed and implemented by governments, today it is an outcome of complex interplay between governments, industries and universities
- In addition to taking care of their traditional functions the three institutional spheres also adopt new roles and also perform the roles of the other spheres
 - Not much empirical evidence!

Entrepreneurial University

- Entrepreneurship as additional role alongside teaching and research
- Focus on commercialisation of technology through licences and spin offs
- Partnership focused on commercialisation and external funding of research
- Focus on science and technology

Three steps towards an entrepreneurial university

1. The ability to set a strategic direction
2. A commitment to seeing that the knowledge developed within the university is put to use, especially in its region.
3. Reverse dynamic moving from problems in industry and society, seeking solutions in academia

Entrepreneurial university

Interaction

- The entrepreneurial university interacts closely with the industry and government; it is not an ivory tower university isolated from society.

Independence

- The entrepreneurial university is a relatively independent institution; it is not a dependent creature of another institutional sphere.

Hybridization

- The resolution of the tensions between the principles of interaction and independence are an impetus to the creation of hybrid organizational formats to realize both objectives simultaneously.

Reciprocity

- There is a continuing renovation of the internal structure of the university as its relation to industry and government changes and of industry and government as their relationship to the university is revised.

- As of 2014, MIT alumni have launched 30,200 active companies, employing roughly 4.6 million people, and generating roughly \$1.9 trillion in annual revenues.

1 900 000 000 000 000 000 dollars

- 31% have filed patents and 34% consider themselves inventors
- 12% established a company
- 38% worked in early staged ventures

- In the 2000s, alumni launched around 12,000 new companies
- > 30 percent of all the surveyed companies are located in Massachusetts, 8 % in Cambridge MA; 20 % in California and 23 % in other countries

In 60 years

Roberts et al: Entrepreneurship and Innovation at MIT

Why Boston Area and SV: Six elements

- **Pillar companies**

- For example, Apple, Google, Facebook and Oracle
- For example, General Electric and iRobot

- **Universities**

- Universities are among the world's best sources of intellectual property and talent.

- **Human capital**

- From pillar companies, universities, and talent from around the world. These places have an ample, if expensive, pool of talent

- **Investment capital**

- Start-ups need different kinds of capital at different stages

- **Mentoring**

- Experienced investors and executives mentor companies and talented professionals

- **Values**

- Silicon Valley and Boston area have a unique set of values that guide the way people behave.

Table 1

Contrast between Ivory Tower and entrepreneurial university.

No.	Ivory Tower University		Entrepreneurial university
1	Isolated from the society		Open and serve to the external society
2	Teaching on campus		Teaching on/off campus
3	Knowledge production for own sake		Polyvalent knowledge produced
4	Meandering stream of basic research		Multiple sources of input into research direction
5	Useful knowledge as accident		Useful knowledge sought
6	No organizational technology transfer capability and no firm formation		TTO, Incubator integrated into innovation strategy to foster start-ups
7	Discipline-based departments as primary units	→	Departments and inter-disciplinary centers have equal status
8	Single internal stakeholder		Multiple stakeholders –internal and external
9	University administration only from academia	→	University administration from multiple sources, including industry and government
10	Funding as matter of right	→	Funding as matter of exchange, something to be earned
11	Operation for self sustainability		Make significant contribution to regional development as well
12	Only academic mind-set		With entrepreneurial ethos

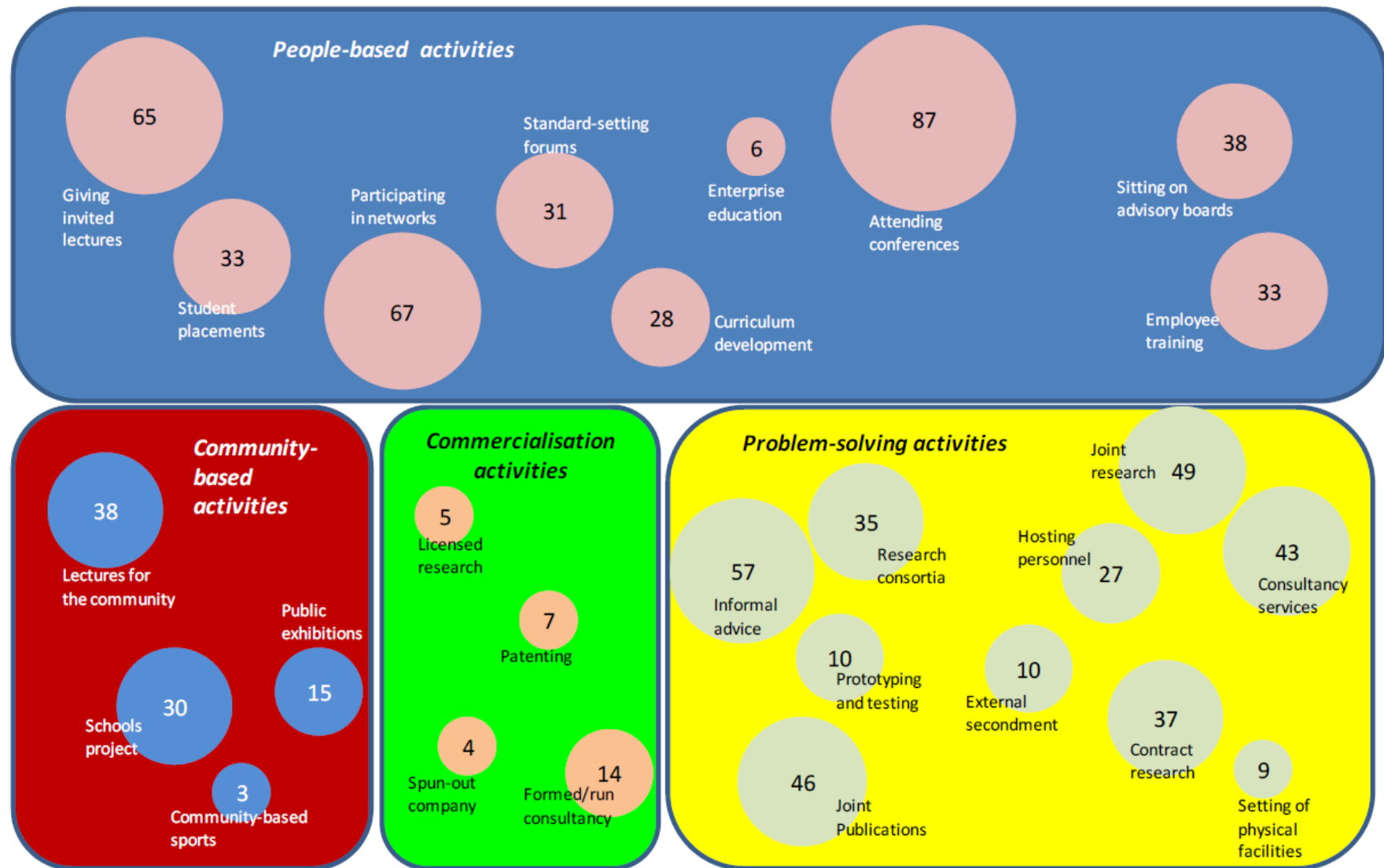
Mode I - as traditional disciplinary research

Mode II - as new form of knowledge production in the context of application

Types of university–industry relations

(see Bercovitz & Feldman 2006; Mansfield 1995; Louis et al. 1989; Perkman et al. 2011; Martinelli, A., M. Meyer, N. von Tunzelmann 2008)

- **Licensing:** Contractual assignment of university-generated intellectual property (such as patents) to external organizations
- **Academic entrepreneurship:** Development and commercial exploitation of technologies pursued by academic inventors through a company they (partly) own
- **Research student:** businesses sponsor individual student.
- **Collaborative research:** Research jointly pursued by university and industrial partners – commonly with public funding
- **Contract research:** Application-oriented research and development activities carried out by university – commissioned and funded by industry
- **Consulting:** Application-oriented research and development activities or advice provided individually by academics – commissioned and funded by industry



Source: Hughes and Kitson (2012)

Universities and Different Forms of Knowledge

(Charles 2006)

Knowledge as a Commodity

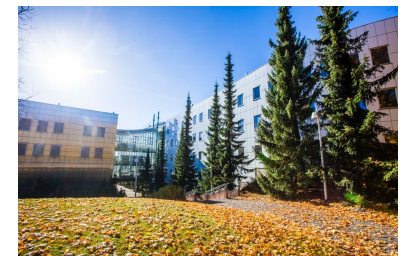
- technology transfer and spin-off firms
- a number of mechanisms and policies were developed for enhancing the commercialization process

Knowledge as Human Capital

- education of students and training activities for people already in work
- the human infrastructure and the institutional mechanisms that foster interactive learning: reproduction and adaptation

Knowledge as Social Capital

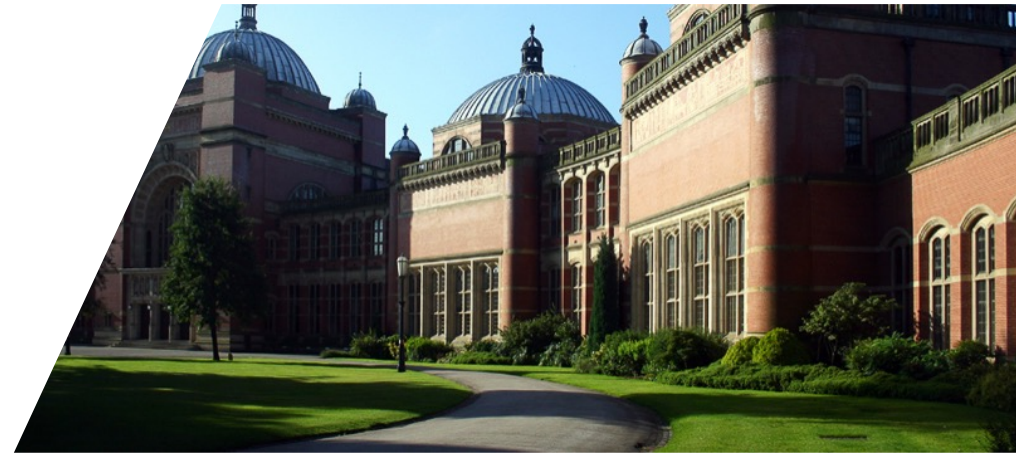
- the social and cultural basis of effective democratic governance and, ultimately, economic success
- The development of networks of civic engagement, and hence in the wider political and cultural leadership of their localities



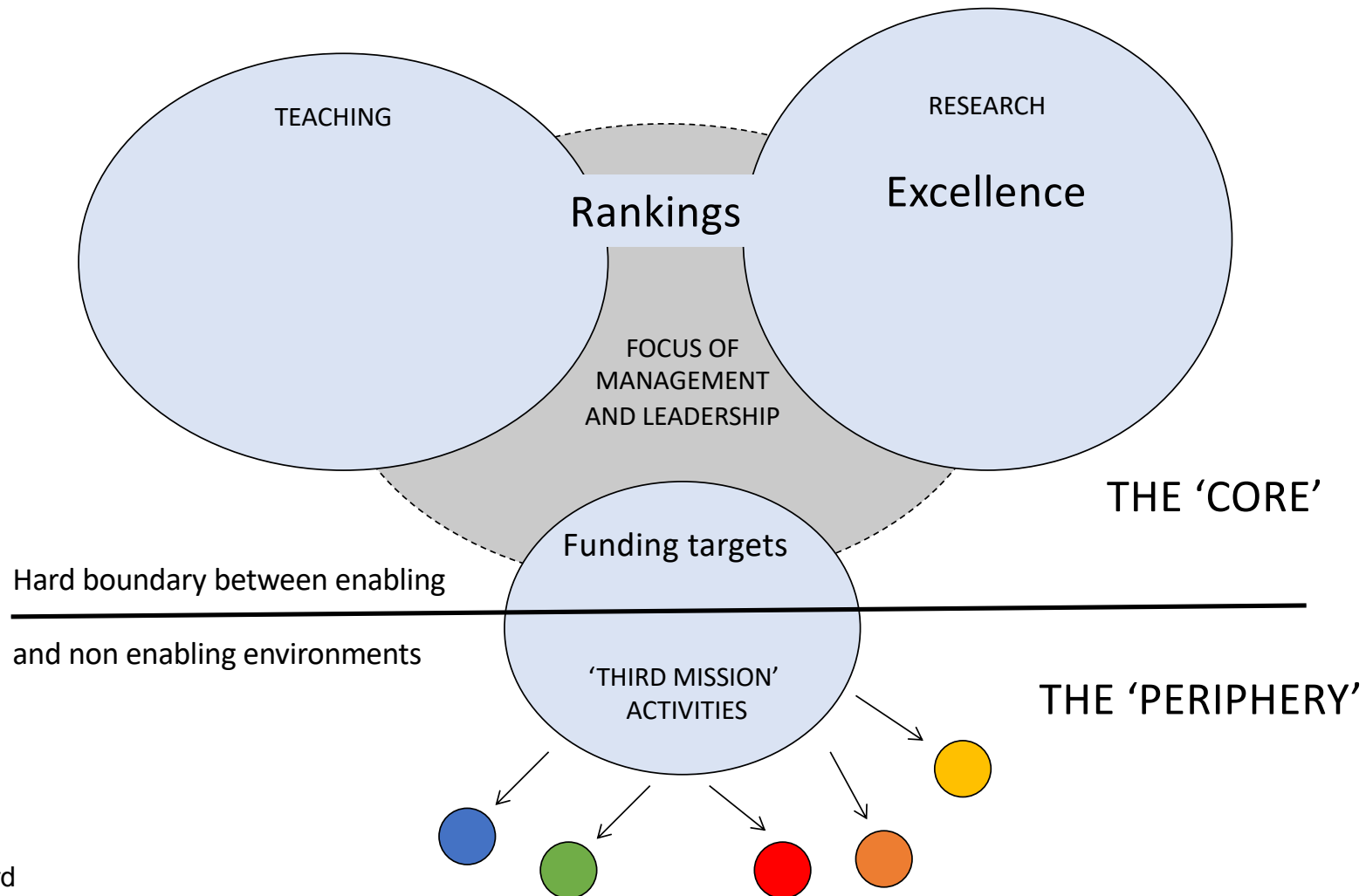
The Civic University Model

- Not only what universities are good at but also **what they are good for**
- UTA (TAU) as a case in point

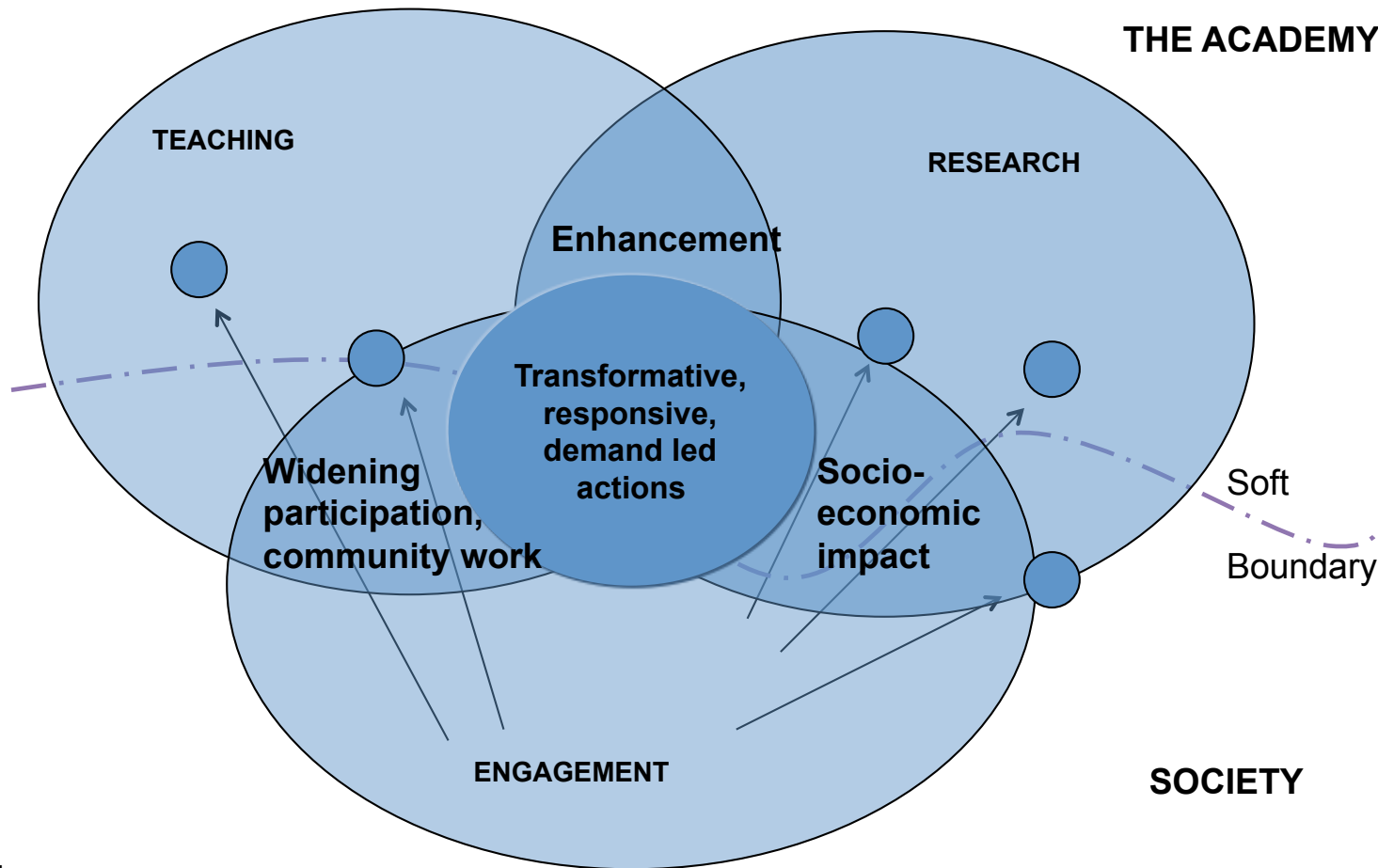
- A sense of purpose
- Actively engaged
- A holistic approach
- A strong sense of place
- Willing to invest
- Transparent and accountable
- Use of innovative methodologies



The 'un-civic' university

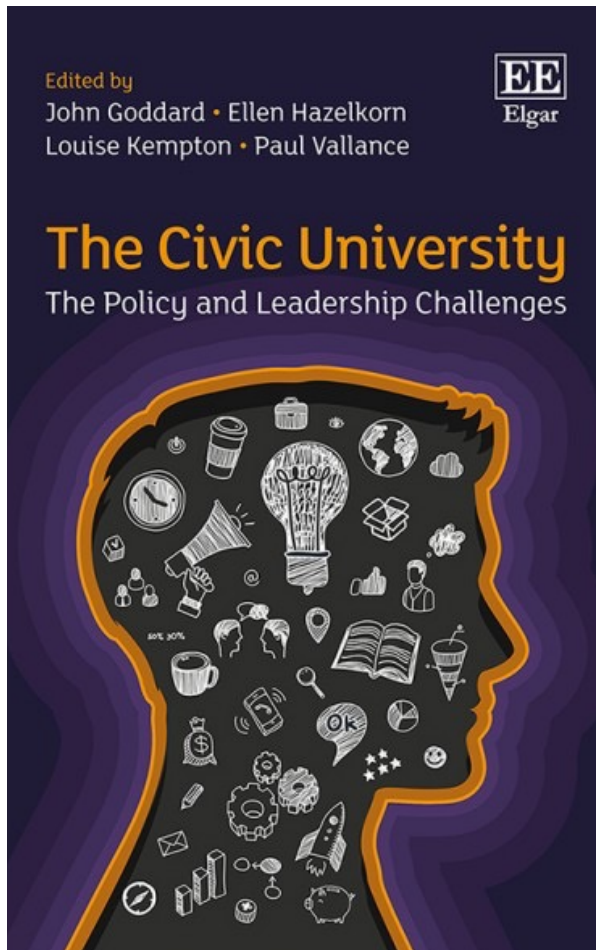


The Civic University



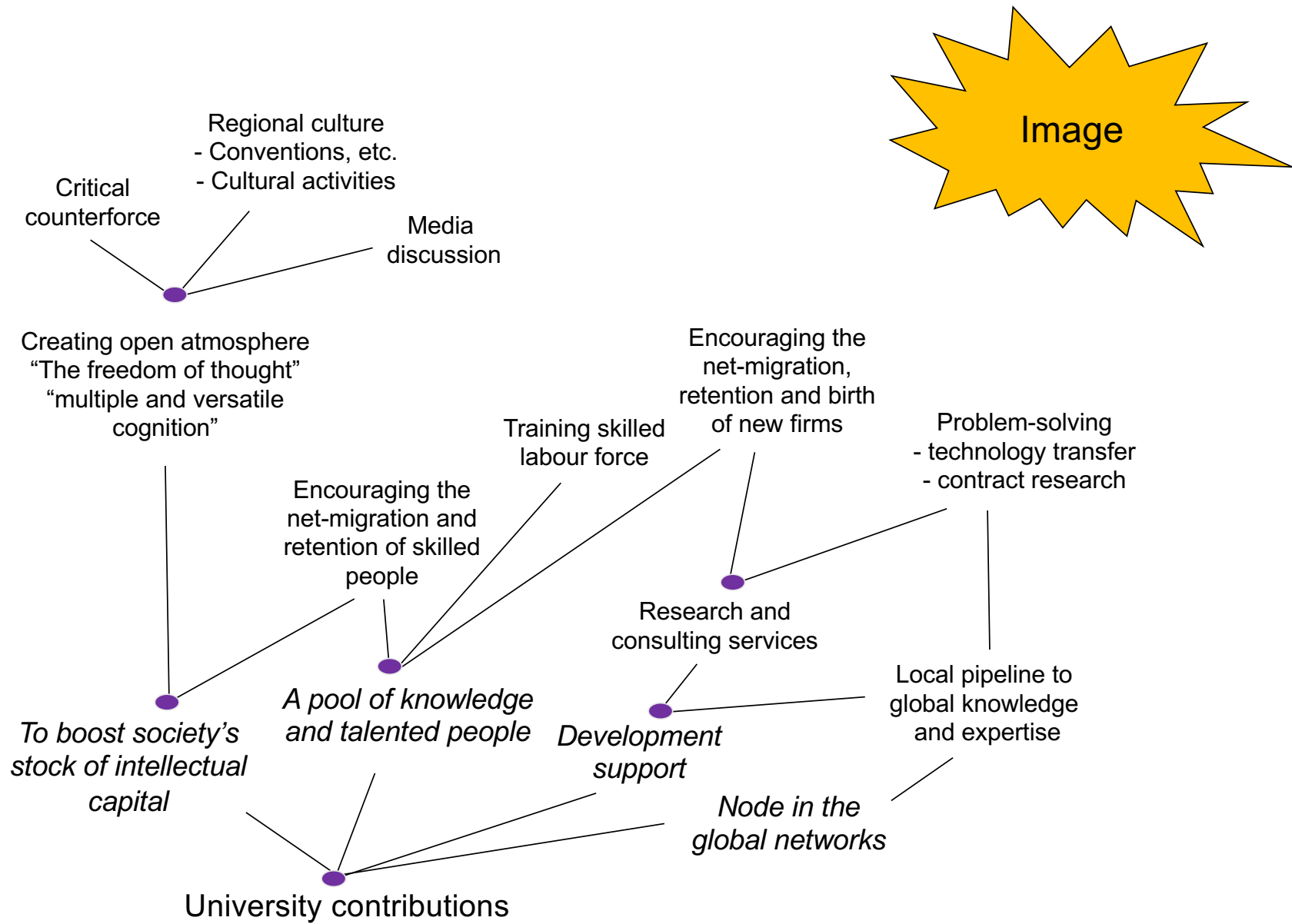
By John Goddard

Chapter 6 - Sotarauta: Leading a
fundamentally detuned choir:
University of Tampere, Finland
— a civic university?



The University of Tampere was a civic university according to its history, internal culture and values **but** it did not systematically develop itself as such

- A long history as a 'civic university', civic engagement has been seen as a natural part of activities
- The concept of civic engagement is not formalised or officially embedded in the strategy
- The partnerships are not managed strategically and holistically
- 'The civic nature' has been taken for granted and development efforts have thus targeted other issues
- **NOTE:** Are we today building an entrepreneurial university?



Thank you – enjoy the holiday season!

But not yet