

Towards an EIT KIC on Added Value Manufacturing

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Knowledge and Innovation Communities (KICs)

The European Institute of Innovation and Technology (EIT) is an EU body set up in 2008 with the ambition of boosting Europe's innovation capacity.

Knowledge and Innovation Communities (KICs) are **EIT's main operation arms**

They are **excellence-driven partnerships** of:

- higher education institutions,
- research centres,
- business and other innovation stakeholders

working together on major societal challenges.

The concept of the KIC represents an innovation in itself, as there is no other similar initiative combining such **large trans-European and thematic partnerships organized in committed legal entities**

Knowledge and Innovation Communities (KICs)

KICs **distinguish** themselves from mere networks through a number of features, most notably their:

- **Highly integrated organizational structure.** Each KIC is an **independent legal entity** in its own right, but is free to choose its legal form. Among the current three KICs, one is organized as a European company, the two others as non for profit associations. KICs are led by Chief Executive Officers (CEOs). They count with a lean management team at central and co-location level.
- **Business and results-orientated approach.** KICs must produce annual business plans, including an ambitious portfolio of activities from education to business creation, with clear targets and deliverables, looking for **both market and societal impact**.

Knowledge and Innovation Communities (KICs)

KICs **distinguish** themselves from mere networks through a number of features, most notably their:

- **Long-term strategic approach.** Each KIC is set up for a **minimum period of Seven Years**
- The core idea is to bring together people from different sectors, disciplines and countries to work together towards common objectives, thereby **fostering knowledge sharing in the most effective way**

Knowledge and Innovation Communities (KICs)

KICs **distinguish** themselves from mere networks through a number of features, most notably their:

- **Smart funding model.** The **EIT funding to KICs is maximum 25%** of their total overall budget. **It catalyzes 75% of financial resources** from a wide range of public and private partners: national/regional funding; EU (non-EIT) funding (e.g. EU R&D funding or structural funds); private funding; participant's own resources.
- **Innovative approach to education:** KICs are nurturing Europe's main innovation asset: its **High Talent People**. EIT provides new career paths between higher education and the private sector, and innovative schemes for professional development. Entrepreneurship is a key component of the EIT KICs education programmes through which world-class researchers and students are equipped with the knowledge and attitudes to turn ideas into new business opportunities.

What is in for manufacturing ?

EIT is expected to launch a call for a **Knowledge and Innovation Community (KIC) on Added Value Manufacturing (AVM)** in 2016*.

According to the EIT's Strategic Innovation Agenda, **a KIC on AVM is expected to provide added value and contribute to a manufacturing renaissance in Europe.**

* Decision made at the trialogue meeting of 25/6/2013

What is in for manufacturing ?

Fully **in line with the priorities of Horizon 2020**, a KIC on AVM will:

- Mobilise investment and long-term commitment from the business sector
- Contribute to the development and deployment of more sustainable, resource-efficient and competitive manufacturing
- Bring significant impact at regional level by fostering the creation of interconnected regional clusters with local transfers and collaboration
- Increase the availability of a highly qualified workforce which is sufficient in quality as well as in numbers
- Reshape the education landscape in manufacturing, by creating closer links between employers and education providers
- Facilitate interaction and promotion of trans-disciplinary skills and competences

Towards a KIC on AVM

Within this context, the **MANUFUTURE** European Technology Platform and the European Factories of the Future Research Association (**EFFRA**) decided to further investigate the relevant interests of the manufacturing community and elaborate accordingly an approach towards a KIC on AVM

- Creation of a **KIC Task Force**
- Organization of a **Stakeholders Forum**

KIC on AVM Task Force

- Currently around 40 members mainly from EFFRA / Manufuture community
- Contributing in content build-up, dissemination and political contacts
- Participation on a volunteer basis
- Interactions so far mainly through e-mail communications and web meetings
- Coordinated by Prof. George Chryssolouris

KIC on AVM Stakeholders Forum

The Forum took place in **Brussels** on the **19th of February 2013**. The goal has been to bring together major European stakeholders in order to:

- Elaborate on the relevance of EIT KICs approach with the European manufacturing 2020 strategies.
- Raise awareness about the importance of the KIC on Added-Value Manufacturing.
- Reflect on relevant strategies and experiences from the political to the operational level.
- Synthesize relevant challenges and expectations from a multi-stakeholder perspective.
- Discuss on the overall approach of the manufacturing community towards a KIC in Added-Value Manufacturing.

KIC on AVM Stakeholders Forum

- The forum has been considered to be a **big success**
- More than **70 participants** from **15 countries**, including manufacturing community stakeholders, MEPs, representatives of the EC, national and regional authorities, the EIT KICs, related associations, and academic/research organizations
- **6 MEPs** joined the event, contributing with very interesting speeches or interventions. All voiced their strong support to the KIC
- European Commission's **DG RTD, DG CONNECT and DG ENTR** were also represented in the Forum with 10 Officers, including 3 Heads of Units (DG RTD G2, DG ENTR A4, DG ENTR B3)
- Representatives of industry, research and education agreed that the KIC model can provide the required skills to facilitate innovation
- KIC Task Force members proposed and elaborated some relevant ideas, methodologies and tools for the KIC on AVM, as a basis for discussion

AVM KIC framework concepts

- Fully in line with Europe 2020 strategy, a key societal goal for the KIC on AVM would be a fundamental impact on “**Growth and Jobs**”.
- KIC is critical for providing the **needed skilled graduates** & employment with long-term careers, which makes a clear link to the FoF initiative.
- The KIC on AVM can make a significant contribution to the goals for the **reindustrialization** of Europe as long as it becomes a ‘skilled workforce factory’.
- Following EIT’s orientation, the KIC on AVM would strategically work towards a **manufacturing education for creativity, innovation & entrepreneurship**.

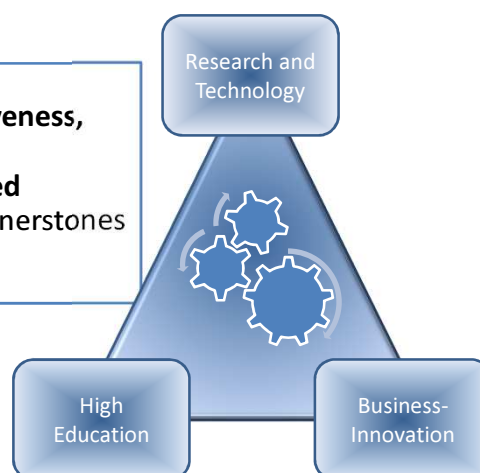
AVM KIC framework concepts

- The **Teaching Factory** concept has been suggested as a relevant flagship paradigm for the seamless integration of manufacturing research, innovation and education activities (a **knowledge triangle** perspective) within the KIC.
- The **industrialization of knowledge** would be the strategic hybrid business perspective of the KIC, addressing both the stimulation of product / process innovation in large manufacturing firms & SMEs and the creation of new business through spin-offs and start-ups.

AVM KIC approach

Mission

Improve industrial competitiveness, create new technology based businesses and highly qualified employment, bridging the cornerstones of the knowledge triangle



AVM KIC approach

Educational strategy

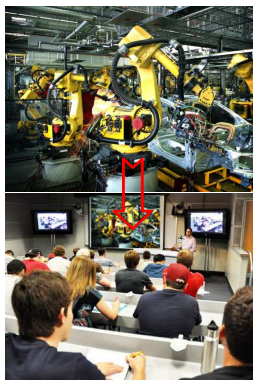
Manufacturing education for Creativity, Innovation & Entrepreneurship

Launching EIT-labelled programmes ensuring that students demonstrate skills and competencies in the following areas:

- Creativity
- Innovation
- Entrepreneurship
- Research
- Leadership

AVM KIC approach

The “Teaching Factory” paradigm



... industrial practices to the classroom



The Teaching Factory
as a multiple mode
“learning channel”
communicating



... “new” knowledge to the factory

AVM KIC approach

The “Teaching Factory” paradigm

“Factory to Classroom”



- **Students** in the classroom act as the **knowledge “receivers”**
- On the industry side, **engineers introduce and present real shop floor problems**
- **Student projects** are launched on the basis of the shop-floor problems

“Lab to factory”



- **Engineers** at an industrial site act as the **knowledge “receivers”**
- Academic facilities provide the **test-bed** for presenting and demonstrating **research results**.
- New **solutions to industrial problems** are investigated on the basis of these results.

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AVM KIC approach

The “Teaching Factory” paradigm



Students watch an augmented video from a warehouse about how raw materials are handled



Engineers present, in a conference room, a welding operation, performed in real time at a robotic cell. Students are able to interact with the engineers from the classroom.

Multiple “learning channel” layouts

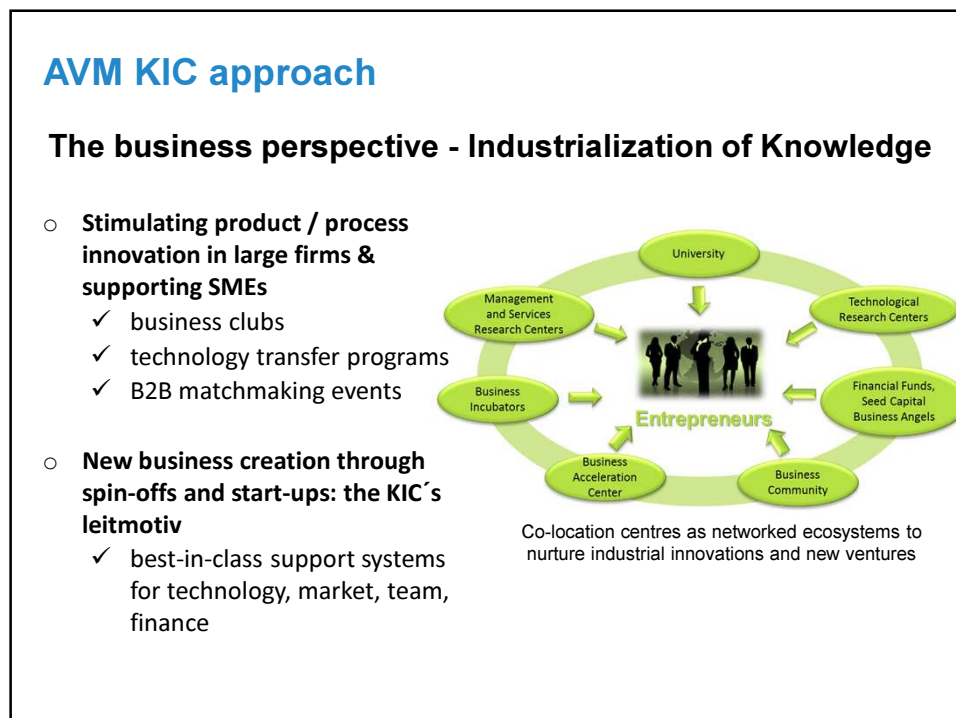
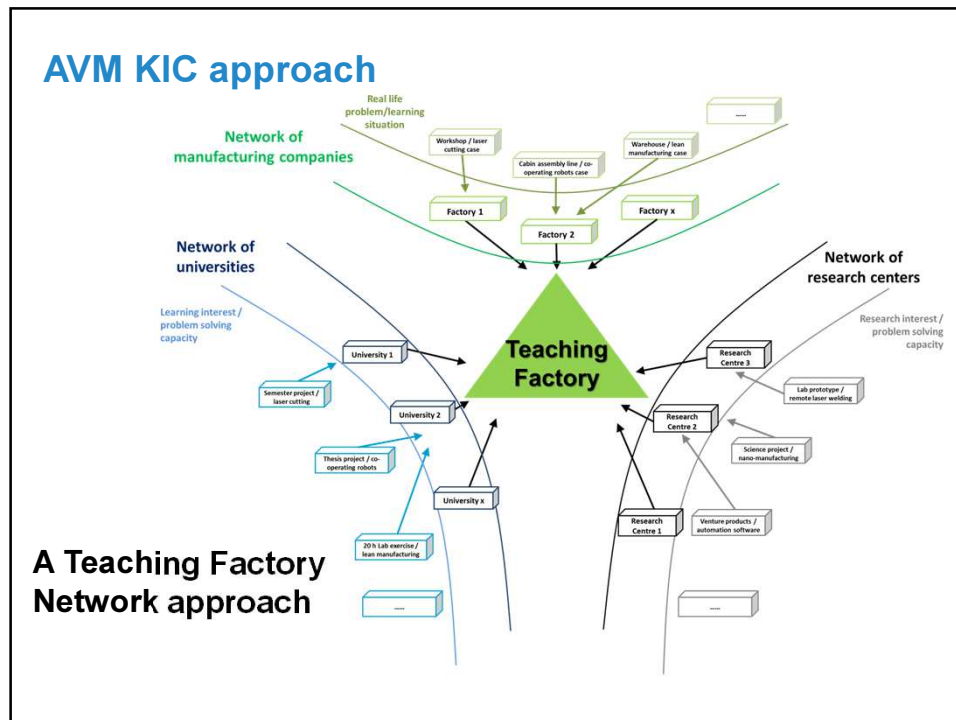
Asynchronous
1-to-1 session



Synchronous
1-to-many
sessions



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AVM KIC approach

The business perspective - Industrialization of Knowledge

EIB loan mechanisms

Exploit / apply research results in production

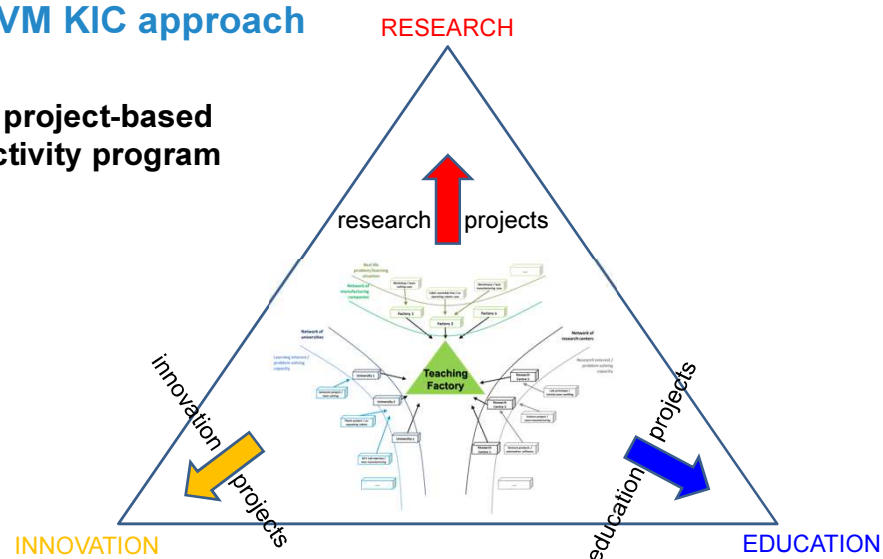
Network of Incubators

Support entrepreneurship & new business creation

Venture capital fund

AVM KIC approach

A project-based activity program



Benefits to SMEs

- Bring SMEs close to new technologies and research concepts.
- Provide access to research and industrial facilities throughout Europe.
- Outsourcing of knowledge intensive research.
- Test and learn about new concepts with low investment risk.
- Attract young talents/engineers.
- Influence education by forging high-quality engineers for long-term competitiveness.
- KIC as a forum for interaction and promotion of trans-disciplinary skills and competences, particularly for the combination of multiple key enabling technologies.

Outlook

On-going activities include:

- The elaboration of the KIC approach by integrating / synthesizing inputs and contributions from all interested stakeholders, e.g. through a number of workshops that are currently being organized in several countries with the participation of local stakeholders
- The considerations for the involvement of the key actors in the proposal preparation and submission (e.g. co-ordination, consortium, etc.)
- Planning for KIC Task Force web / physical meetings

Major events / activities so far

- Task Force kick-off meeting, September 2012, Brussels
- Stakeholders Forum, February 2013, Brussels – European Parliament
- Workshops and meetings (physical or virtual) with stakeholders from several countries, April 2013 - ...
- ✓ Gain political support
- ✓ Establish contacts with a critical mass of interested organizations (e.g. 13 countries & more than 35 key players around Europe so far)
- ✓ Elaboration of the KIC approach by integrating / synthesizing inputs and contributions from all interested stakeholders
- ✓ Investigation on the involvement of key actors in the proposal preparation and submission

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KICs call framework of guidance

A successful KIC has:

- A long-term strategy
- A diverse, balanced, world-class partnership
- Top quality governance and management
- An integrated network of co-location centres
- A legal entity suited to its needs
- A sustainable business model and financial plan
- A policy for intellectual property
- A communications plan supporting the EIT brand
- A plan for outreach and dissemination
- An eye for synergies

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The EIT funding model

- The EIT funding model seeks to leverage and align innovation investment. Therefore the EIT financial contribution on average does not exceed 25% of a KIC's overall funding.
- The non-EIT funding may include KIC partners' own revenues and resources, but also public funding at national, regional and EU level, in particular the – current and future – Structural Funds and the Framework Programme for Research and Innovation.
- The EIT financial contribution to the KIC is provided primarily in the form of a grant for action, which may cover, up to 100% of the total eligible costs of KIC added-value activities (KAVA) – that is, activities contributing to the integration of the Knowledge Triangle of research, innovation and higher education; this includes establishment, administrative and coordination activities of the KICs, and contributing to the overall objectives of the EIT.
- The other KIC activities, so called KIC Complementary Activities (KCA) not financed by the EIT grant, must contribute to the implementation of the long term strategy of the KIC.

Thank you!



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