

Concept Note:

Inter- and Intra-Cluster Technology Roadmapping

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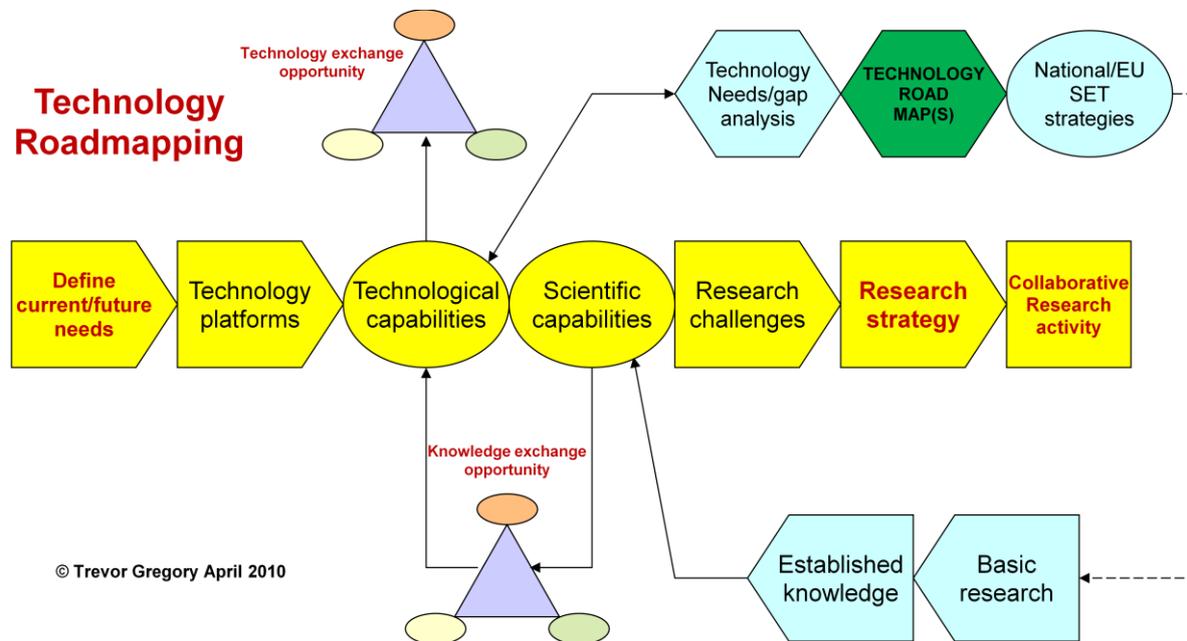
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What is Technology Road Mapping?

Based on a Foresight model, road mapping is a high-level planning tool to help both project management and strategic planning in an innovation network or cluster of organisations, involving both the knowledge and business base.

There are many different methods for developing Technology Road Maps and the one used in this activity is based on the model illustrated in the schematic below.



The process moves from left to right and is driven from the initial input by the businesses, which describes future technology needs. An articulation of these needs generates opportunities for both technology (B2B) and knowledge exchange (KB2B). Navigation through the process should result in the development of a research plan from which potential collaborative activity (e.g. R&D) can be defined.

Analysis of the technology needs and the technology gaps forms the basis of the construction of the Technology Road Map. Furthermore, this 'road map' can be used to influence the strategic direction of the network/cluster in this so-called community of interest.

The process gathers together groups of technical, commercial as well as knowledge experts, and takes them through the following stages:

- WHERE ARE WE NOW? This is the initial part of the process and requires the input of expert practitioners working in the area under focus.
- WHERE DO WE WANT TO BE? During this stage participants have the opportunity to 'crystal-ball gaze' and articulate views on the future needs of the network, for example, the customer/consumer base, market trends, technological needs and adjacent networks.
- HOW ARE WE GOING TO GET THERE? A number of technology themes will have been identified from the previous discussion. The delegates are then given the opportunity to work with others who have similar interests in order to develop potential collaborative activity.

The participants need to have sufficient information about the markets and the business to say where the topic under consideration is at the present time. The first stage includes an articulation of the current 'state-of-the-art', and the objective is to agree the present situation. It is important to make reference to the National and European picture of the current situation, and to then 'map' with regional interest (business) and expertise (knowledge base).

The next stage is to define what technologies are needed for businesses to grow, and where the expansive potential markets may be. This 'vision' can span 1 – 10 years.

The third stage is to determine how the community of interest (CoI) can work together as a Community of Practice (CoP) to achieve their objectives and goals. This leads into an articulation of potential collaborative Technology and knowledge transfer opportunities, and Collaborative R&D activity.

Track record of Actors

Trevor Gregory (IATP Limited) has had many years practical experience of, and a strong track record in, **technology and knowledge transfer activity**. This experience has been gained across and within the academic, private and public sectors, and spans 30+ years. He has worked as a Section Manager in R&D in a global chemical company and as Applications Manager for an SME which developed and manufactured state-of-the-art analytical equipment. He also worked on a flagship innovation programme for the UK's Department of Trade and Industry – the Faraday Partnership (pre-cursor to Knowledge Transfer Networks), and recently developed the Regional Innovation Strategy for the Y&H region.

Alan Smith (IATP Limited Associate) has had a career first as an academic, followed by many years in industrial R&D. He was then business and technology director for an advanced materials business, before being responsible for acquisitions and mergers for a speciality chemical company. He now focuses on technology roadmapping for individual companies, government organisations, and for EU projects. He lectures worldwide on emerging technologies with current emphasis on the use of nanotechnologies, recently returning from Zimbabwe. He also works with the Technology Strategy Board on project management; and also with the World Bank, lately in Argentina.

Past and current activities

Here are two examples of recent work that we have been involved in:

ACORN – A Collaboration into Research on Nanoparticles was a multi-million Euro research programme involving 16 companies and 7 Universities funded jointly by the UK Government and industry. The programme was a result of a TRM exercise and facilitated by the author of this note.

https://connect.innovateuk.org/c/document_library/get_file?p_l_id=4145206&folderId=4157508&name=DLFE-34549.pdf

The author also organized and facilitated TRM activity involving Environmental Technology companies and interested academics which resulted in the definition of the strategy for the innovation network (i-Net) in the SW of England.

<http://www.environmental-inet.co.uk/news/2011/may/mapping-a-cleantech-future/>

Impact and relevance

TRM is an excellent tool for developing a strong community of interest within a cluster or innovation network. Establishing a strong CoI is the first step towards a strong Community of Practice, and gives definition to the CoI. It is also possible to work across the clusters/networks to encourage open and adjacent innovation activity to occur. The benefits of participating in TRM activity include:

- OVERALL: Be part of an OPEN INNOVATION community and identify many opportunities for business growth.
- SHORT TERM: Opportunity to understand the technology needs of businesses in your 'community'.
- SHORT TERM: Opportunity for commercial gain through 'local' B2B technology exchange e.g. licensing of a technology between companies.
- SHORT TERM: Opening of opportunities in the EU through commercial and technology agreements, facilitated/brokered by EENSW.
- SHORT TERM: Opportunity to acquire knowledge from a 'local' university, and establish a collaborative relationship.

- MEDIUM TO LONG TERM: Develop on-going relationships with similar communities across the EU.
- MEDIUM TO LONG TERM: Identify opportunities for collaborative contract research activity.
- LONG TERM: Define and participate in collaborative RTD funded locally or nationally.
- LONG TERM: Participate in collaborative RTD projects funded by the EC, and involving EU business and knowledge base partners.