

Technology Roadmapping
Core Tool for Strategy and Innovation

IPMI – Institute of Project Management and Innovation
Prof. Dr. Martin G. Moehrle

www.innovation.uni-bremen.de

Mainz, Friday, 2017-09-22

A brief overview of „today's topics“.

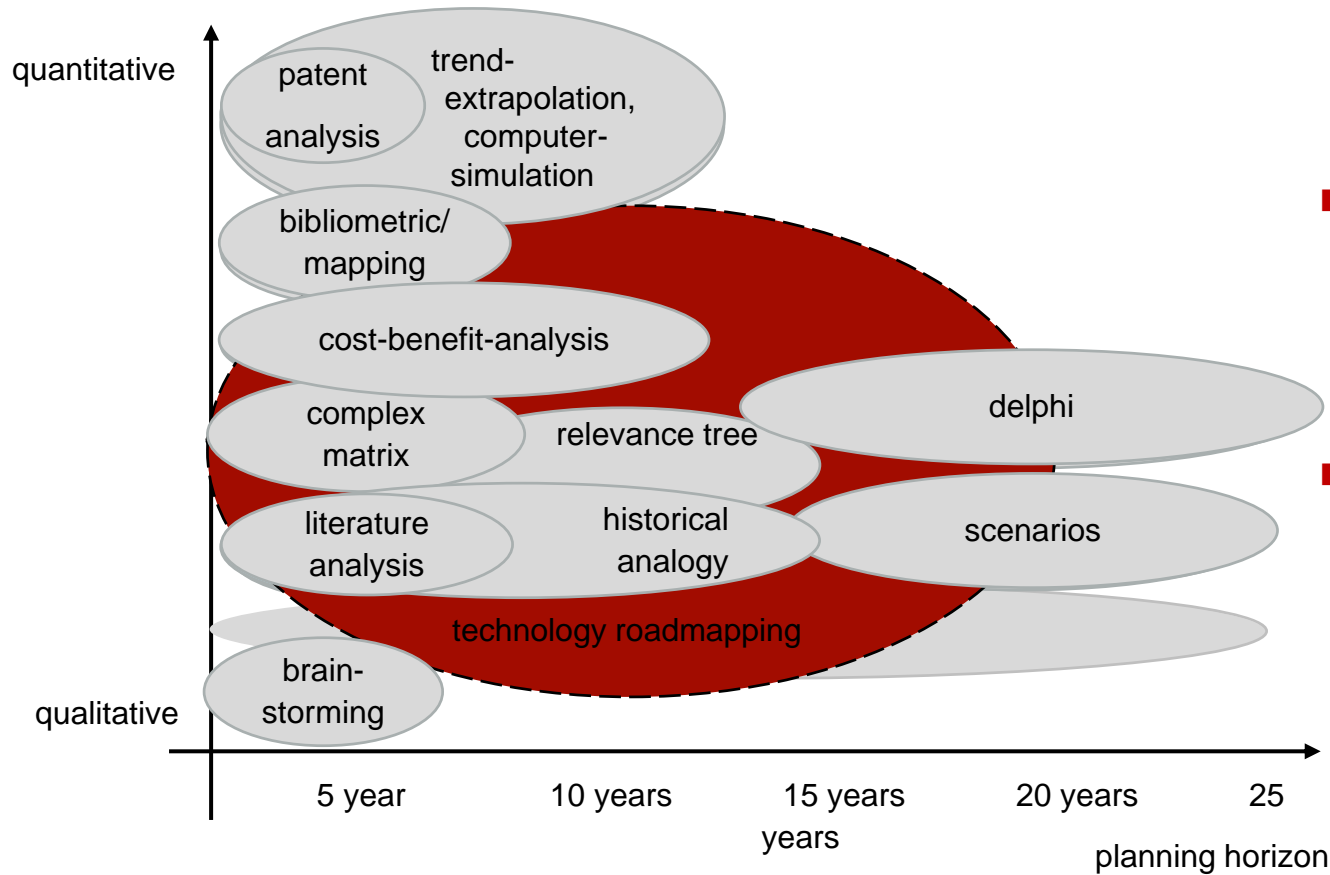
Introduction to technology roadmaps and technology roadmapping

Technology roadmapping exercise

Conclusions

Agenda

Technology roadmapping is a solid method of the tool box used for foresight.



- Technology roadmapping integrates qualitative and quantitative elements = f {methodological design} and
- it provides short-, medium, and long-term developments

Overview of tools for forecasting

Source: Reger 2006

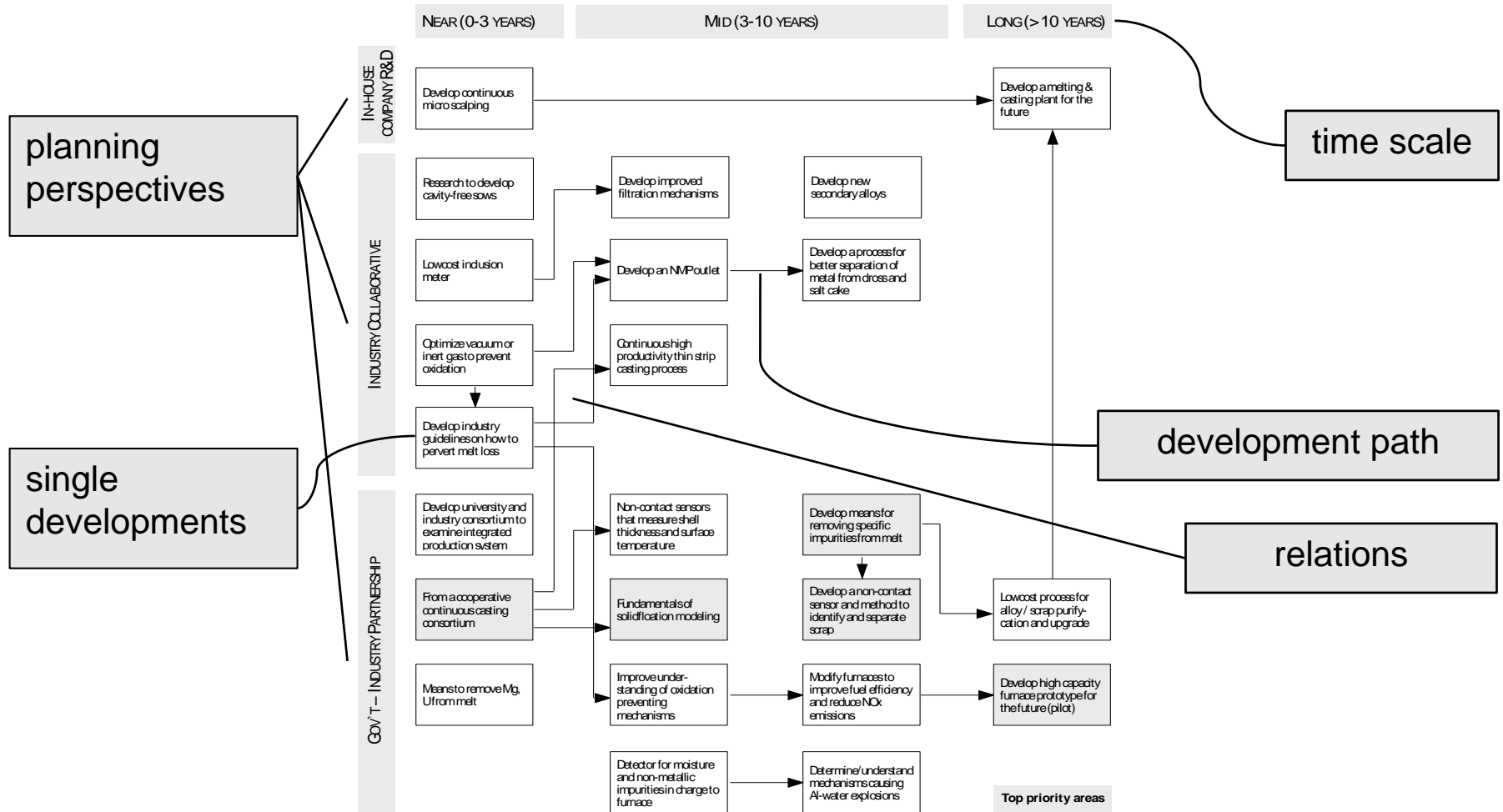
There is a strong analogy between a geographical roadmap and its technological counterpart.

Roadmap (geographic)	Technology roadmap
Places existing in a certain area	Technologies existing in a certain domain
Crosslinks between places	Crosslinks between technologies
Size and structure of places	Relevance and structure of technologies
Distance to certain places	Distance of technologies (i.e. realization, implementation, performance)
Direct/indirect connections to places	Direct connections between technologies & barriers (i.e. R&D expenses)
Difficulties to overcome to reach a place	Certain barriers that need to be overcome first (e.g. technological, social)
Characteristics of the landscape	Characteristics of the technological landscape (e.g. acceptance, costs)

Analogies between roadmaps

Source: IPMI

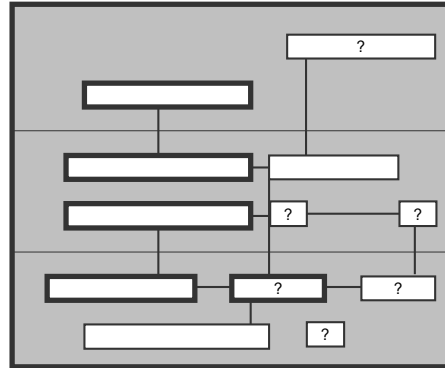
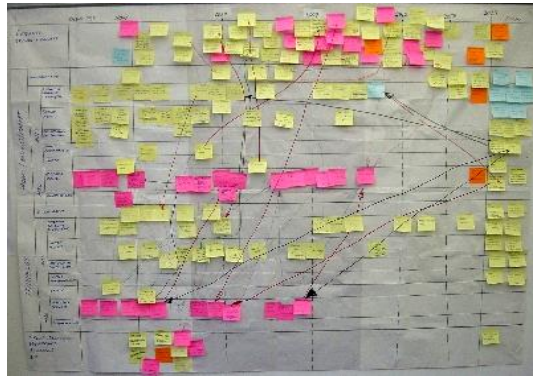
A roadmap provides a foresight of developments in short-, medium-, and long-term perspective.



Chronological perspectives of a roadmap

Source: IPMI, The Aluminium Association 1997

Finally, roadmapping helps to move from a divergent to a convergent process: governance of innovation.



Year	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Tuning	Push button	Push button - Synthesizers	Touch pad - Synthesizers	Voice actuated						
Selectivity	Ceramic resonators	SAW's	Digital signal processors							
Subcarrier function	Stereo	Paging	Data	Maps						
IC technology	Linear	5u CMOS	3u CMOS	1u CMOS						
Display	LEDs	Liquid crystal	Fluorescence							
Vehicular LAN						Single wire	Glass fibre			
Digital modulation										500 Mhz bandwidth
PRODUCTS	RECEIVER 1 Stereo	RECEIVER 2 Plus: Scan Seek	RECEIVER 3 Plus: Personal paging	NEXT GENERATION Plus: Stock market Road information Remote amplifiers Remote controls	FUTURE GENERATION A NEW SERVICE Super Hi Fi Local maps					

Divergent process



Convergent process

Explore



Shape



Plan



Implement

From divergence to convergence

Source: IPMI

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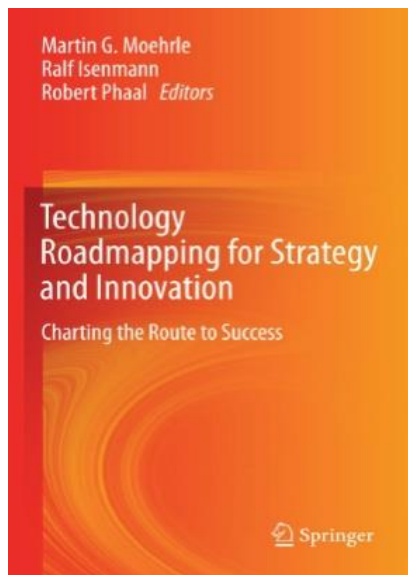
Conclusions

Technology roadmapping is a powerful tool with a variety of unique characteristics.

- Technology roadmapping is a process with several steps and several parties; it can take place on different institutional levels.
- The quality of technology roadmapping improves with the number of steps taken and the care for finding and answering open questions.
- Technology roadmapping is on technologies, but also on (local) drivers, (local) needs, resources and players.
- When implemented professionally, technology roadmapping provides a promising & powerful method that helps to improve governance of national innovation systems.

Conclusions

**Further information is available in different publications:
textbooks, journal articles, reference projects & consulting.**



Further reading

Source: IPMI

Chart your route to success – call the IPMI team.



University of Bremen

IPMI – Institute of Project Management
and Innovation
Wilhelm-Herbst-Straße 12
D-28359 Bremen

E-Mail martin.moehrle and ralf.isenmann
@innovation.uni-bremen.de

Internet <http://www.innovation.uni-bremen.de>

Fon 0421 / 218-66800

Fax 0421 / 218-66802



Contact details