



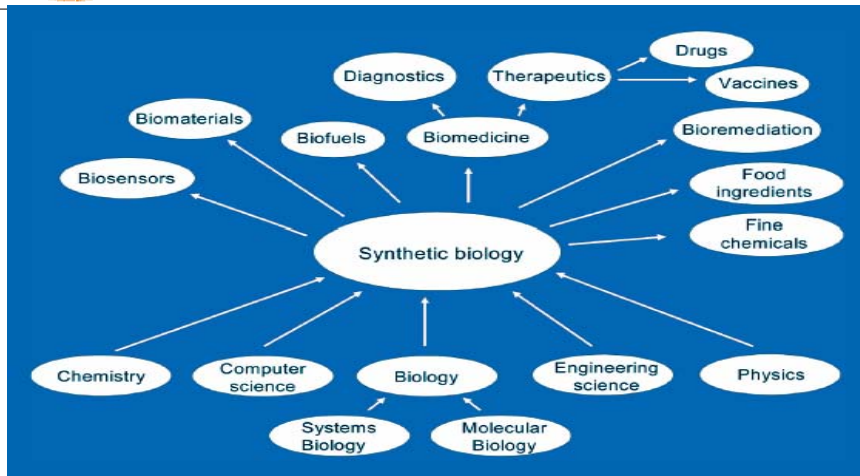
Roadmap for Synthetic Biology in Europe

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The interdisciplinary character of SB



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Success factors for Emerging Technologies



Future success in Synthetic Biology depends upon

- a shared understanding of the underlying definition of the new technology
- awareness of its potentials and achievements
- involvement of all actors in the innovation system
- an integrated strategy both on the European and national level
- mobilisation of public and private resources on the European and national level

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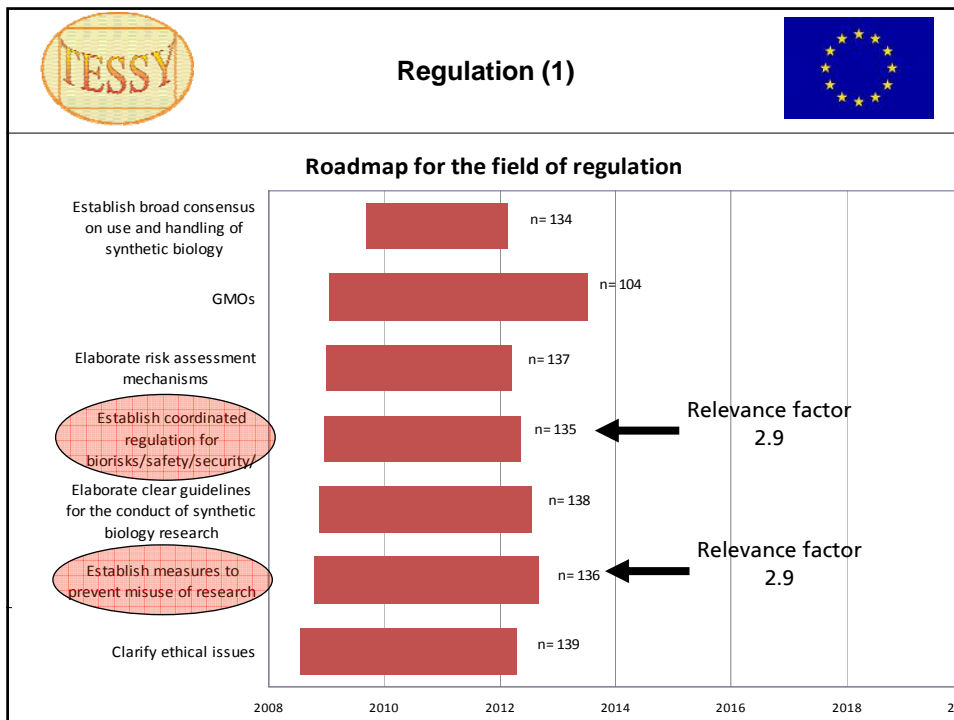
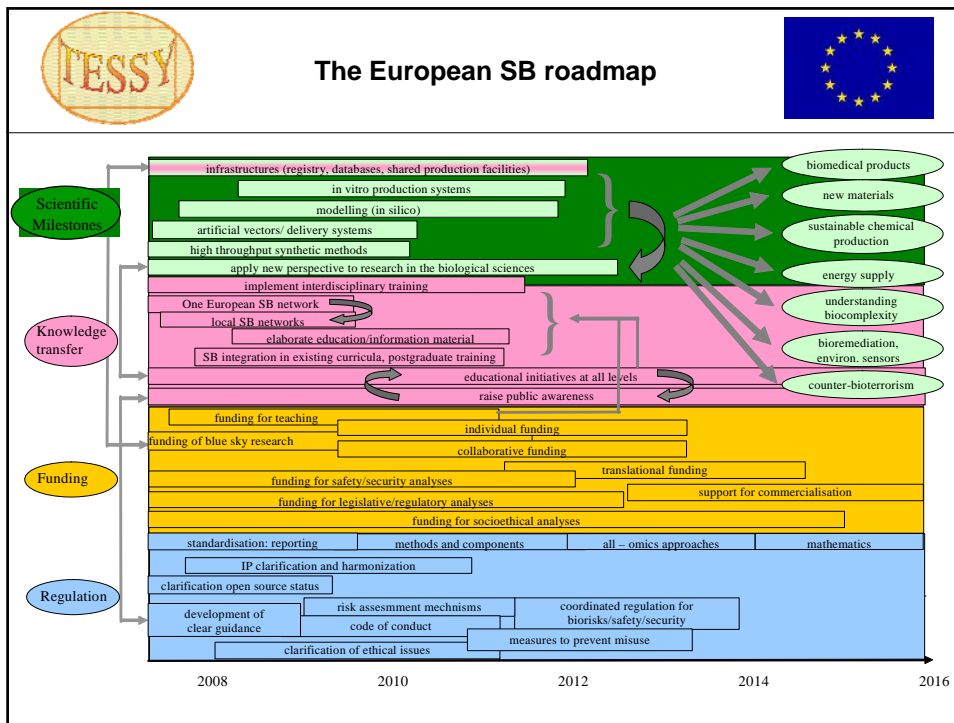
Strategy development – the roadmapping process

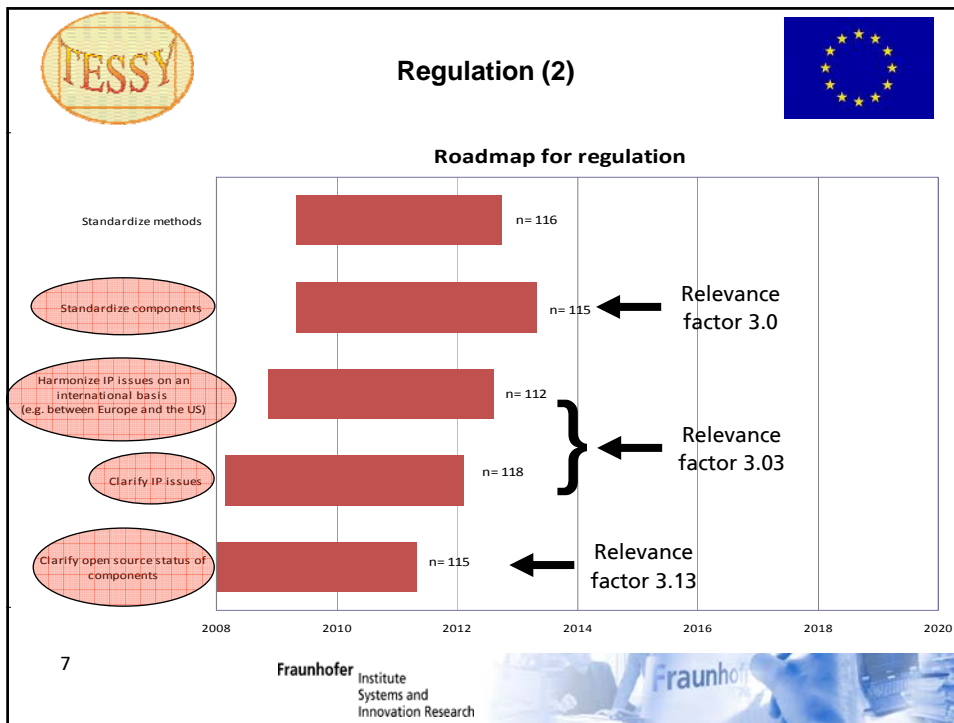


1. Core advisory board identified key milestones, goals and framework conditions of SB in Europe
2. TESSY consortium elaborated draft roadmap
3. Comments of broader community on draft roadmap collected in an online survey
4. Core advisory board discussed results and developed final version of roadmap
5. Dissemination and interpretation of the roadmap

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Conclusions Regulation

activity	relevance factor	timing
clarification of open source status	3.13	short term
IP clarification and harmonization	3.03	short term
standardize components	3.0	short to mid term
measures to prevent misuse	2.9	mid term
coordinated regulation of biorisks/safety/security	2.9	mid term
clarification of ethical issues	2.78	short to mid term
code of conduct	2.76	short to mid term
risk assessment mechanisms	2.6	short to mid term

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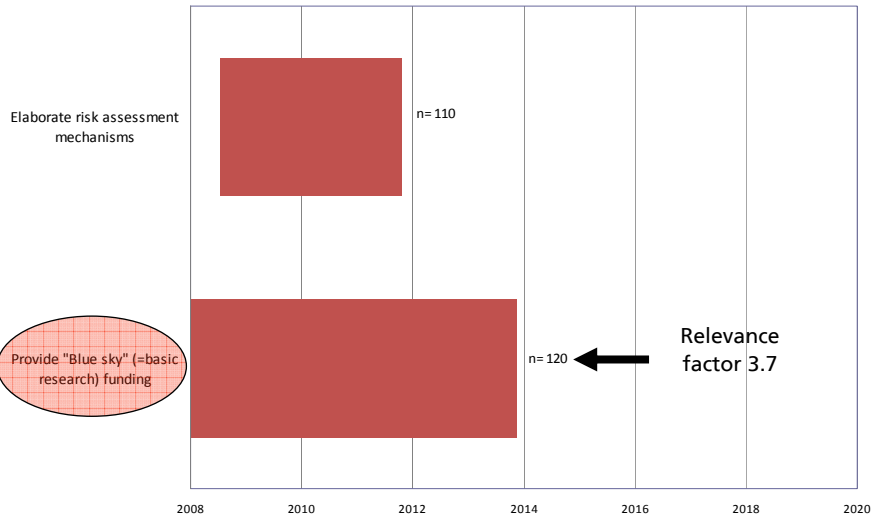
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Funding (1)



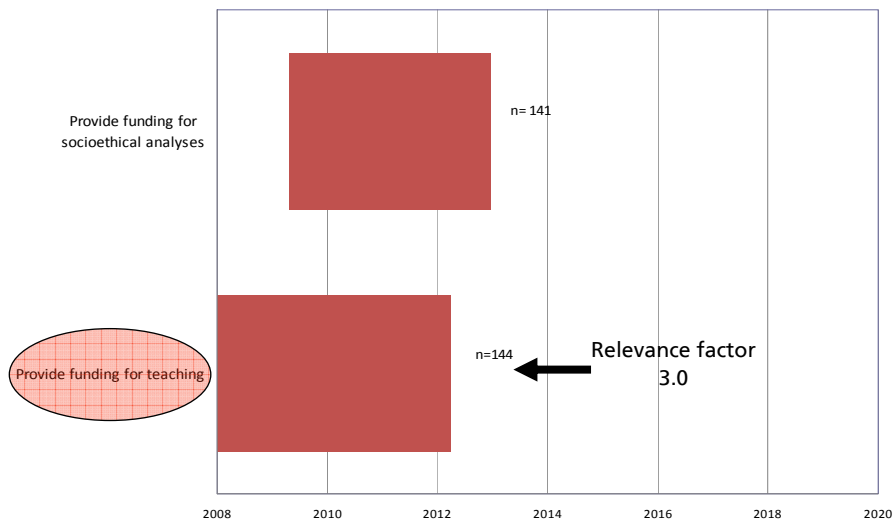
Roadmap for regulation and funding



Funding (2)



Roadmap for the field of funding

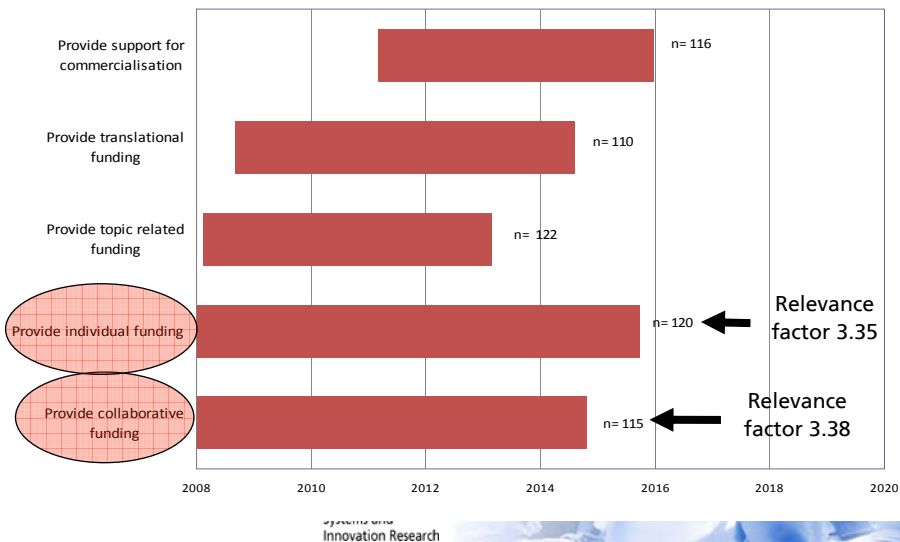




Funding (2)



Roadmap for funding



Conclusions Funding



activity	relevance factor	timing
blue sky funding	3.7	short term
collaborative funding	3.38	short to mid term
individual funding	3.35	short to mid term
translational funding	3.08	mid to long term
funding for teaching	3.0	short to mid term
support for commercialisation	2.63	long term
funding for context analyses (socioethical, legislative/regulatory, safety/security)	2.6	short to long term

-> Expert estimate: Total amount of funding required to start with: 10 – 25 Mio €
5 – 10 % of the budget dedicated to ELSA research/accompanying measures

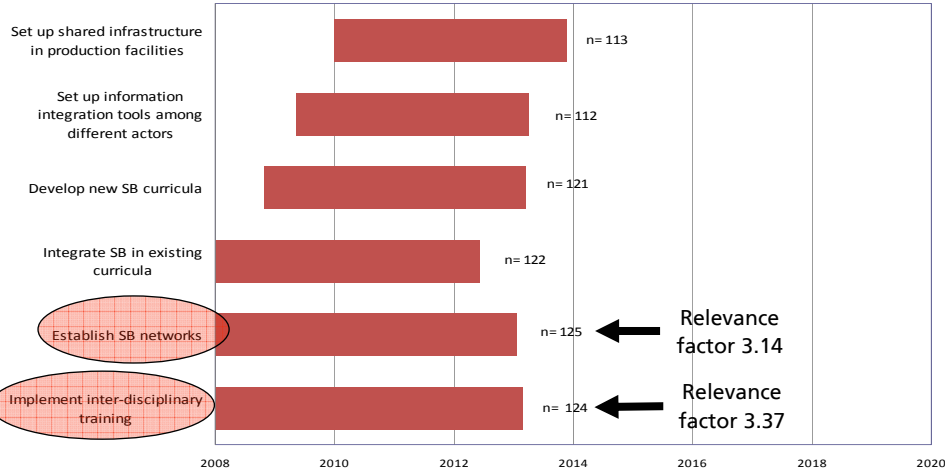




Knowledge Transfer (2)



Roadmap knowledge transfer



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Conclusions Knowledge Transfer

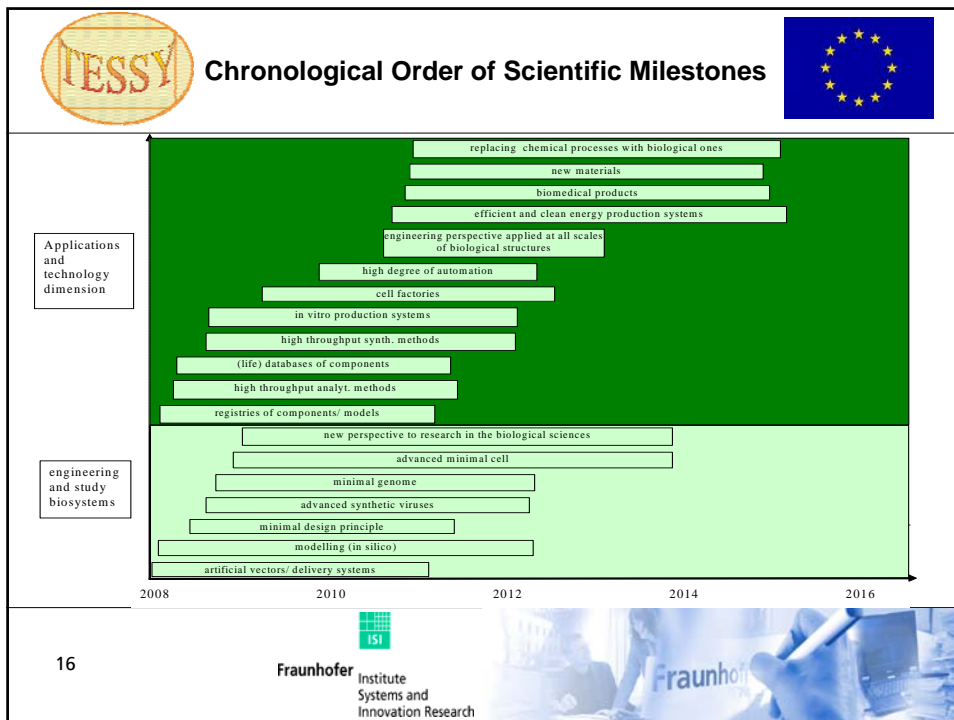
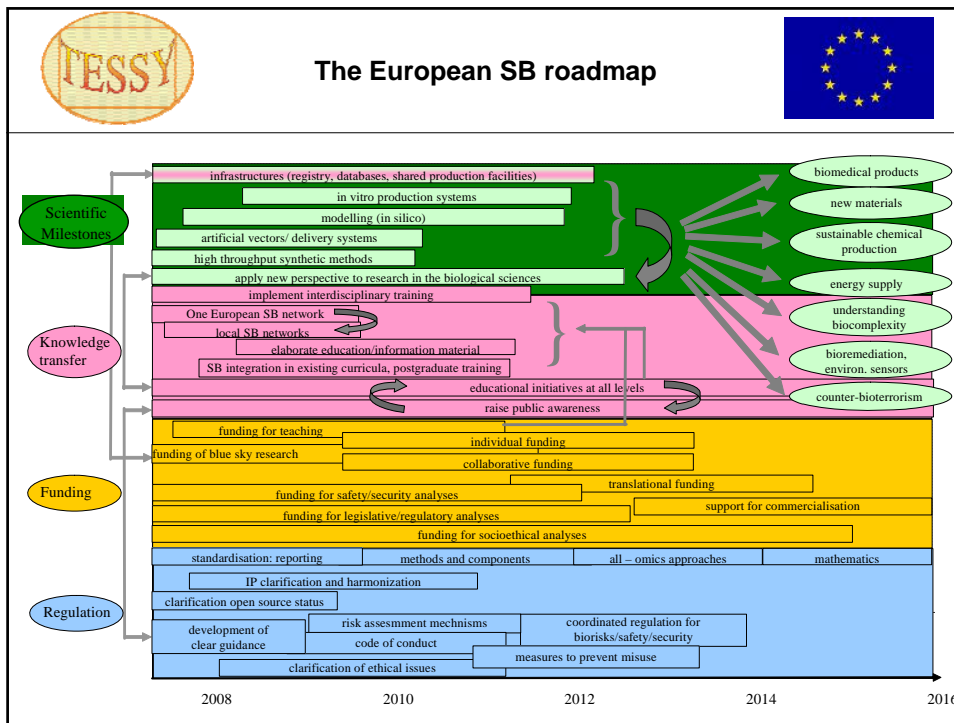


activity	relevance factor	timing
implement interdisciplinary training	3.37	short to mid term
establish SB networks	3.14	short term
SB integration in existing curricula	3.05	short to mid term
elaborate education/information material	2.76	short to mid term
educational activities at all levels	2.66	short to long term
raise public awareness	2.62	short to long term

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Conclusions Scientific Milestones



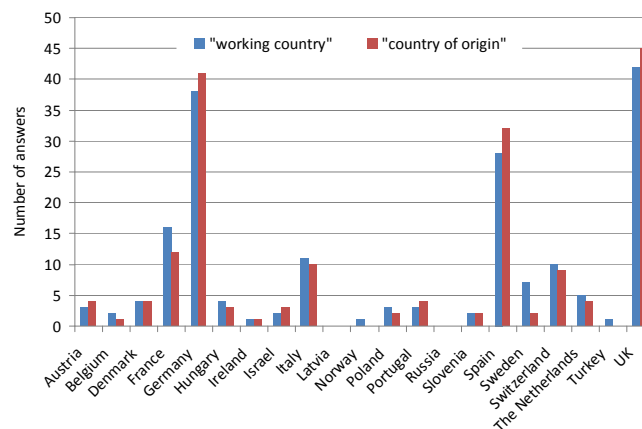
- clear chronological order of scientific milestones
- but: "moving target", as there are extensive research efforts also from private side the scientific advancement can be speeded up.

-> Current Scientific Roadmap is a Guideline for the Strategic Planning of Research Focus but it should be updated regularly according to latest state-of-the art in SB.

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National contribution



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National differences



National differences result from

- different R&D focus
- different research capacities
- different research infrastructure
- different industrial structure and required applications

-> funders should consider national specialities in the development of their funding measures

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Conclusions



- 1) The roadmap displays a number of activities with assessed high relevance (e.g. interdisciplinary training, funding, clear guidelines, IP etc.)
- 2) High consent about early starting point of many activities (standard deviation ~2 years)
- 3) The required time for each activity (end point) was assessed differently (standard deviation ~ 4.5 years)
- 4) The survey showed that the perceived relevance of an activity declines if the activity is further in the future. Similarly the consent about starting point declines if the starting point is further in the future (higher standard deviation).

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Synthetic Biology will require concerted activities
in several dimensions

- scientific research and development
- funding
- knowledge transfer
- regulation

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Thank you very much
for your attention !

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