
Manu*FUTURE*-DE 2030

Strategic Research Agenda for manufacturing technologies

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Manu*FUTURE* 2017 Conference, 24. October 2017, Tallinn



MANUFUTURE[®]-DE

GEFÖRDERT VOM

 Bundesministerium
für Bildung
und Forschung

BETREUT VOM

 **PTKA**
Projekträger Karlsruhe
Karlsruher Institut für Technologie

 **VDMA**

 **Fraunhofer**
IPA

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Project history and current status

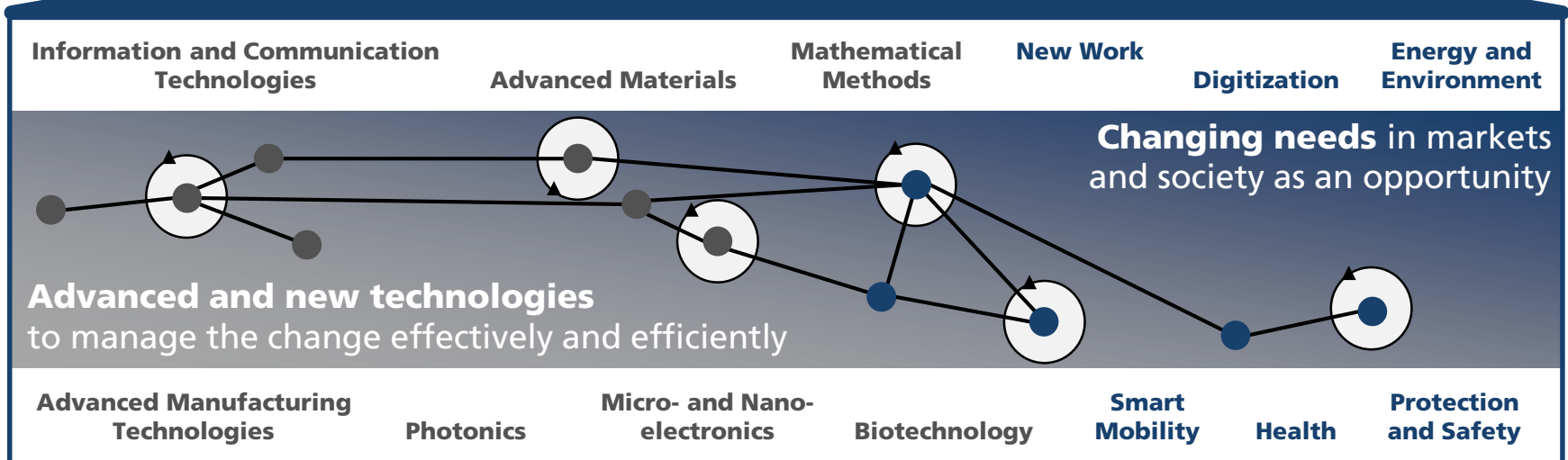


Changing conditions for the manufacturing industry

Global changes pose new challenges to the manufacturing industry

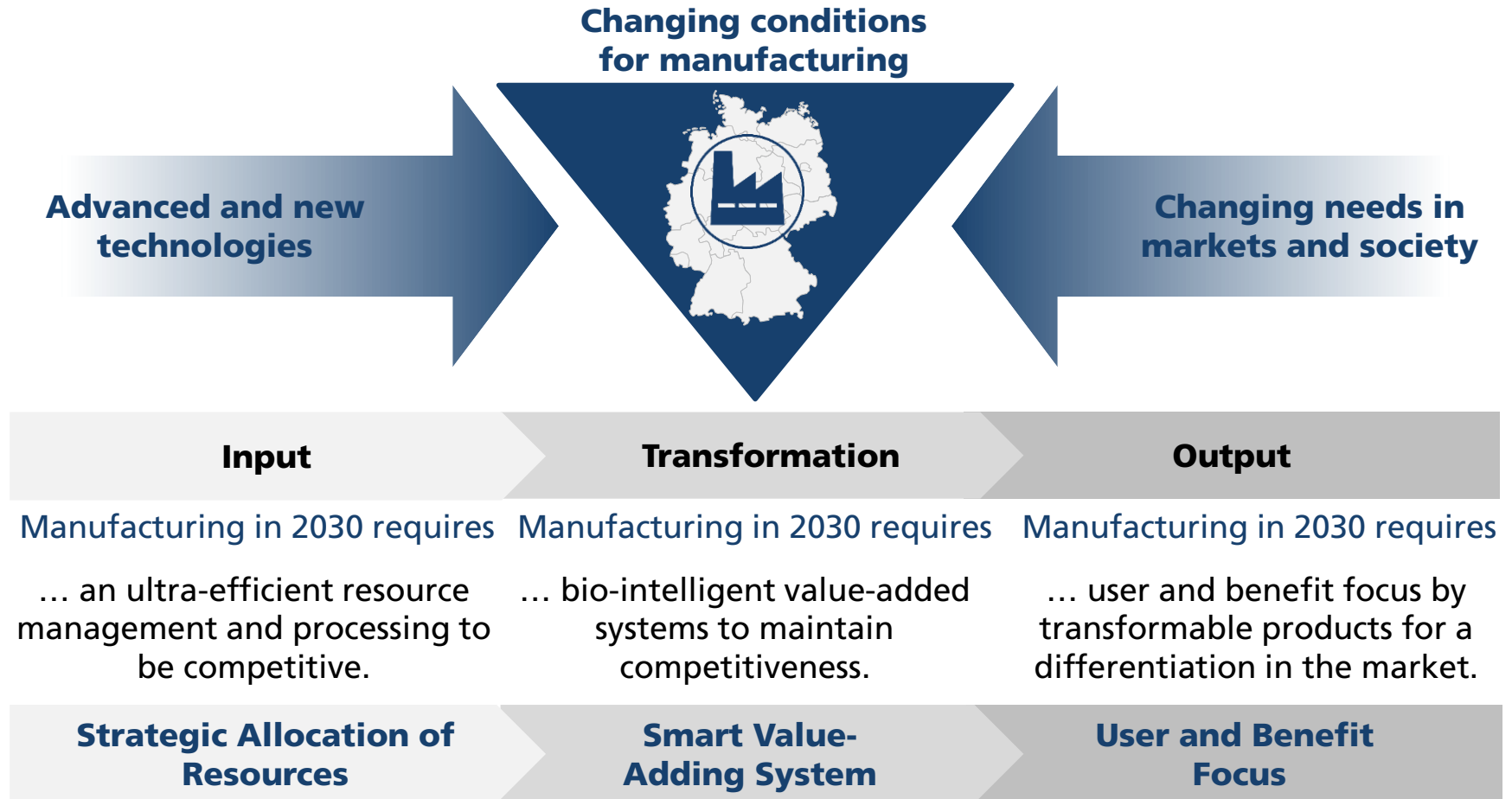


Manufacturing is the integrator of multidisciplinary technologies



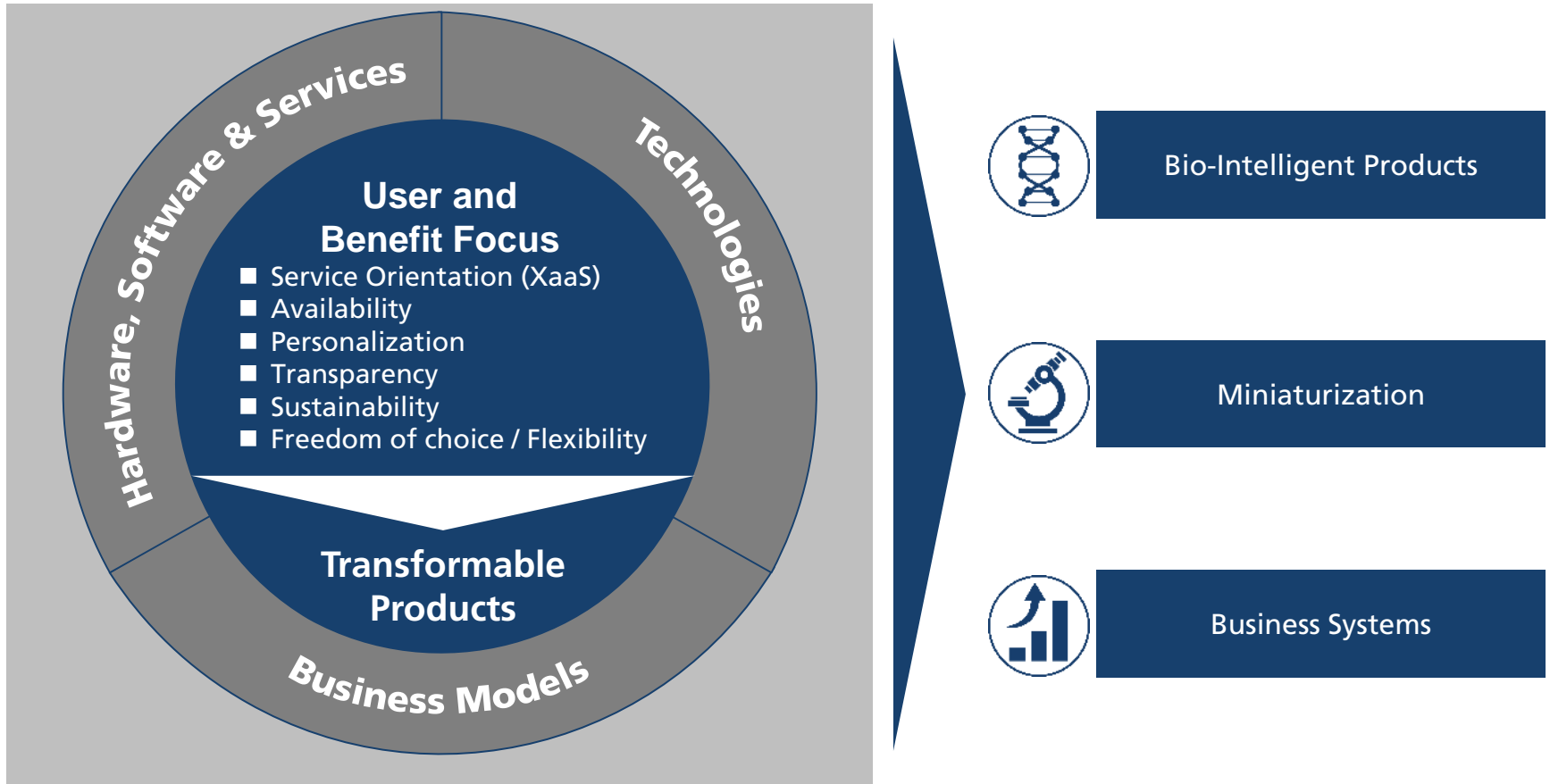
Three strategic pillars

Remaining competitive needs our action!



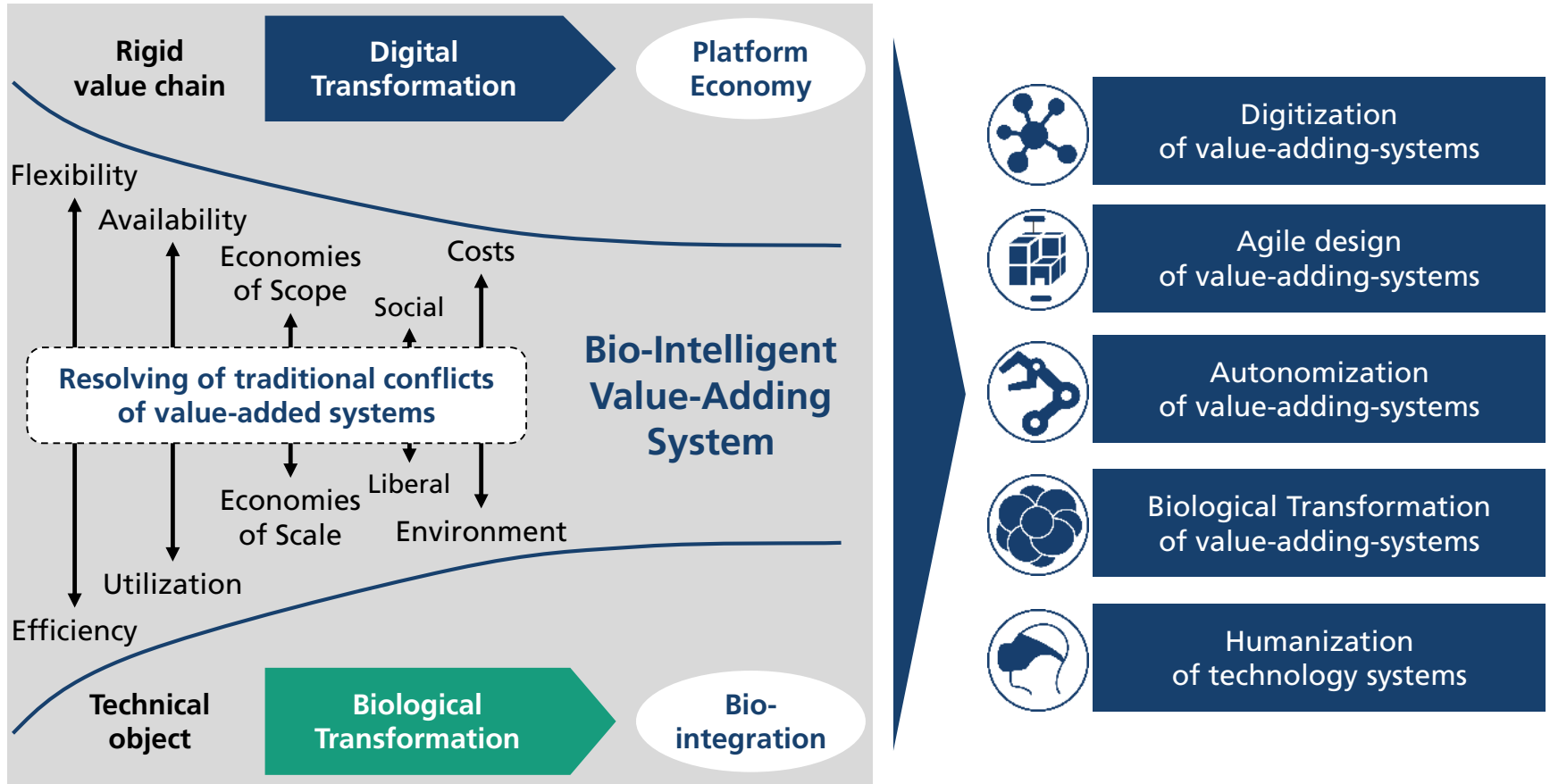
User and Benefit Focus

Differentiation in the market by user-oriented development of transformable products



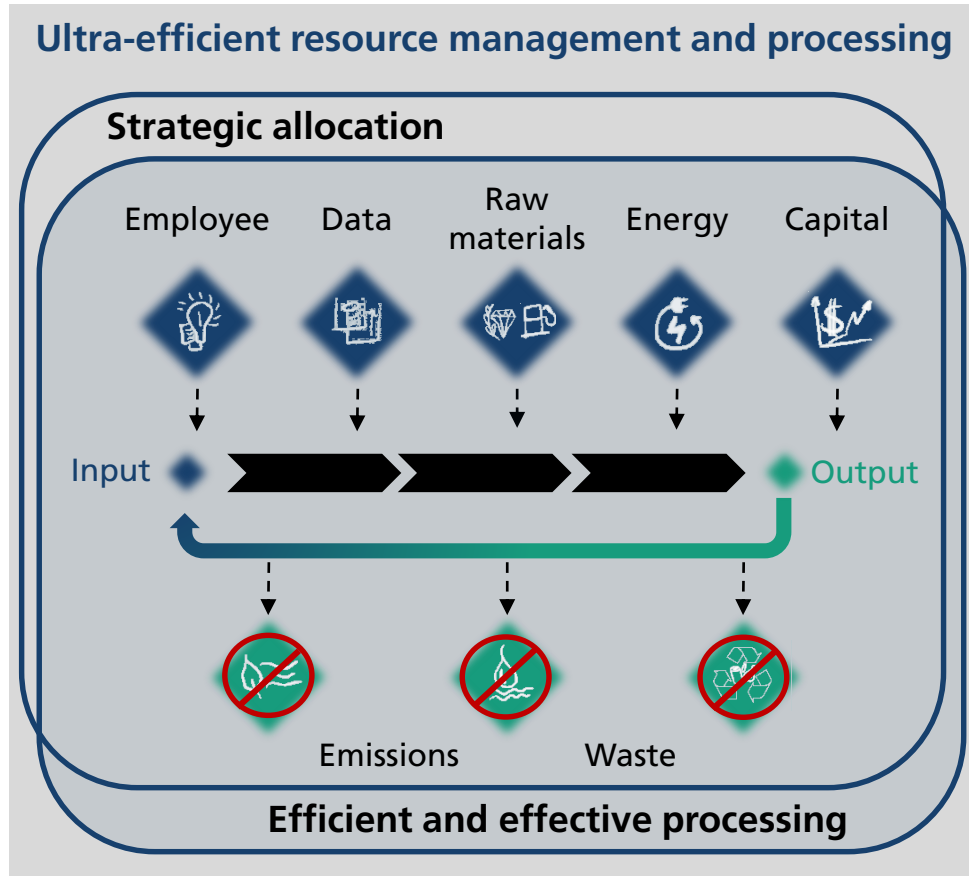
Smart Value-Adding System

Competitiveness is determined by autonomous and ad-hoc adaptive manufacturing systems



Strategic Allocation of Resources

The limitation of resources requires ultra-efficient resource management and processing



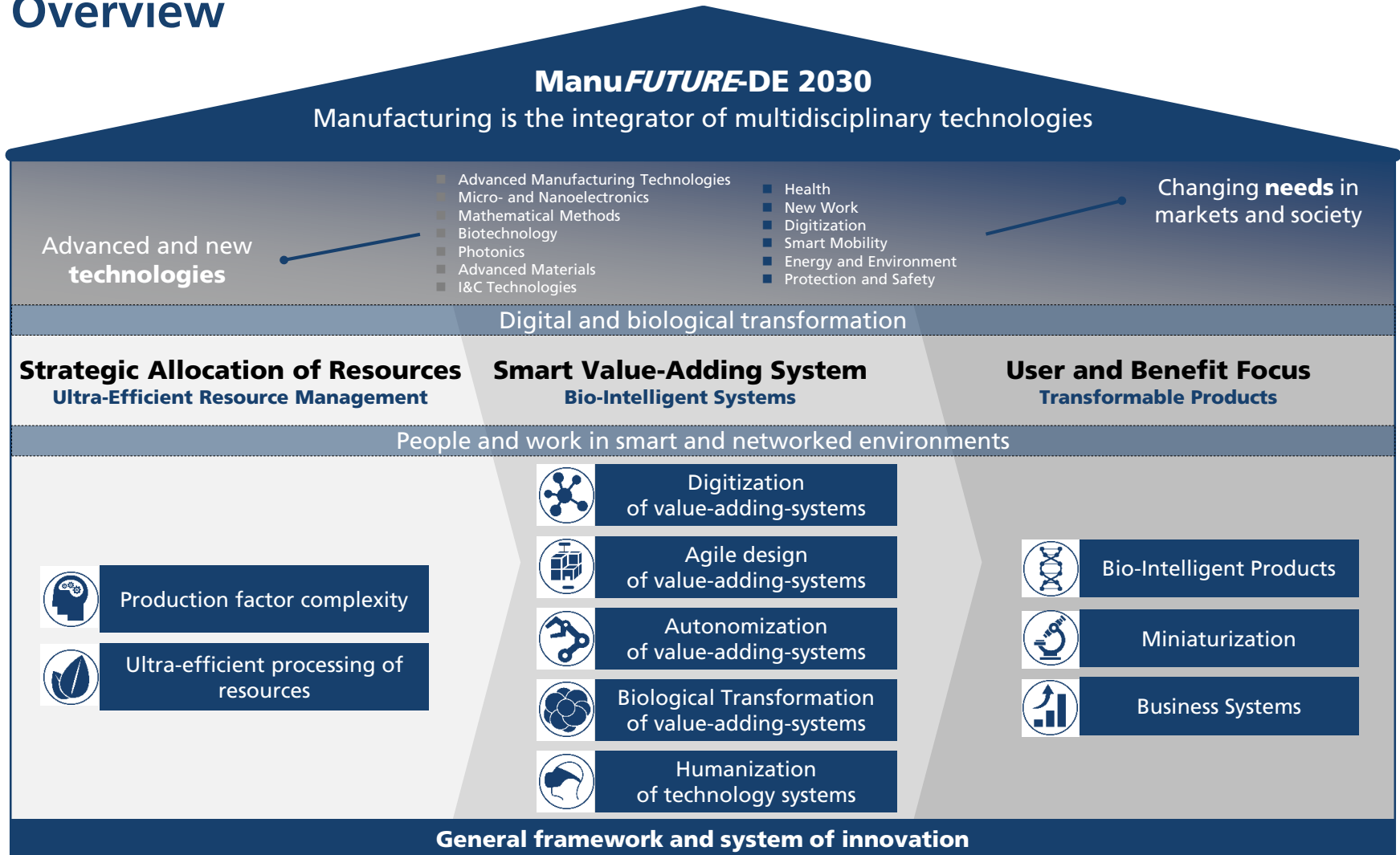
Production factor complexity:
human, knowledge,
organization, leadership



Ultra-efficient processing
of resources

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Overview



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Structure of the results

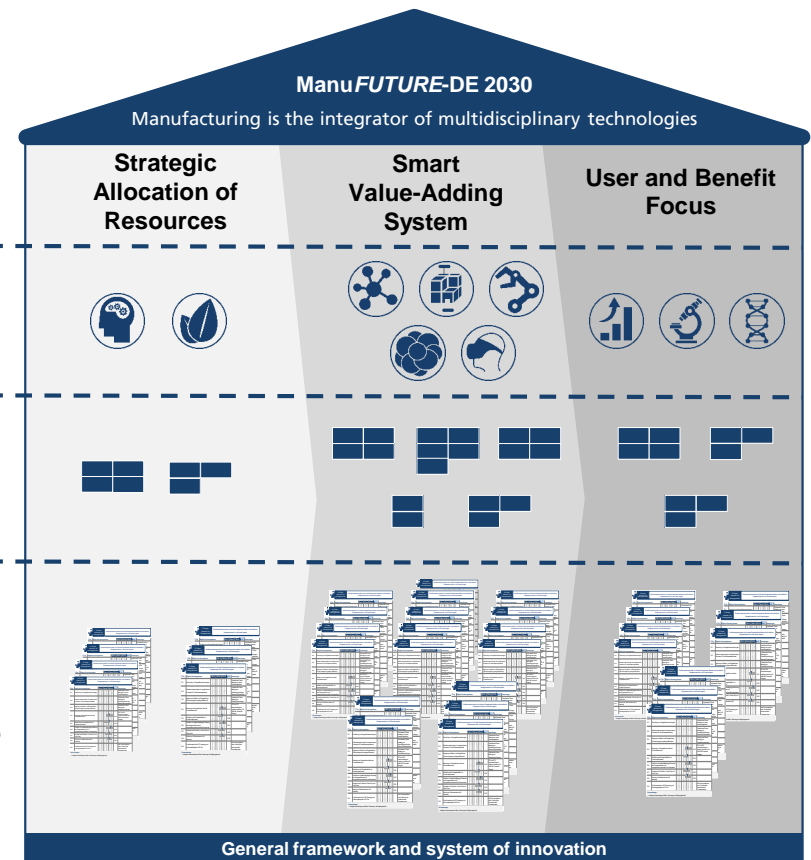
- **Scientific Workshop**
27 participants
 - **6 Industry Workshops**
66 participants
 - **Online Survey**
447 participants;
industry share of 79%
 - **47 Expert Interviews**
 - **Soundingboard**
42 participants
 - **SME Reflection**
with 2 SME associations
-
- **144 involved participants**
industry share of 47%

3 strategic pillars

10 fields of action

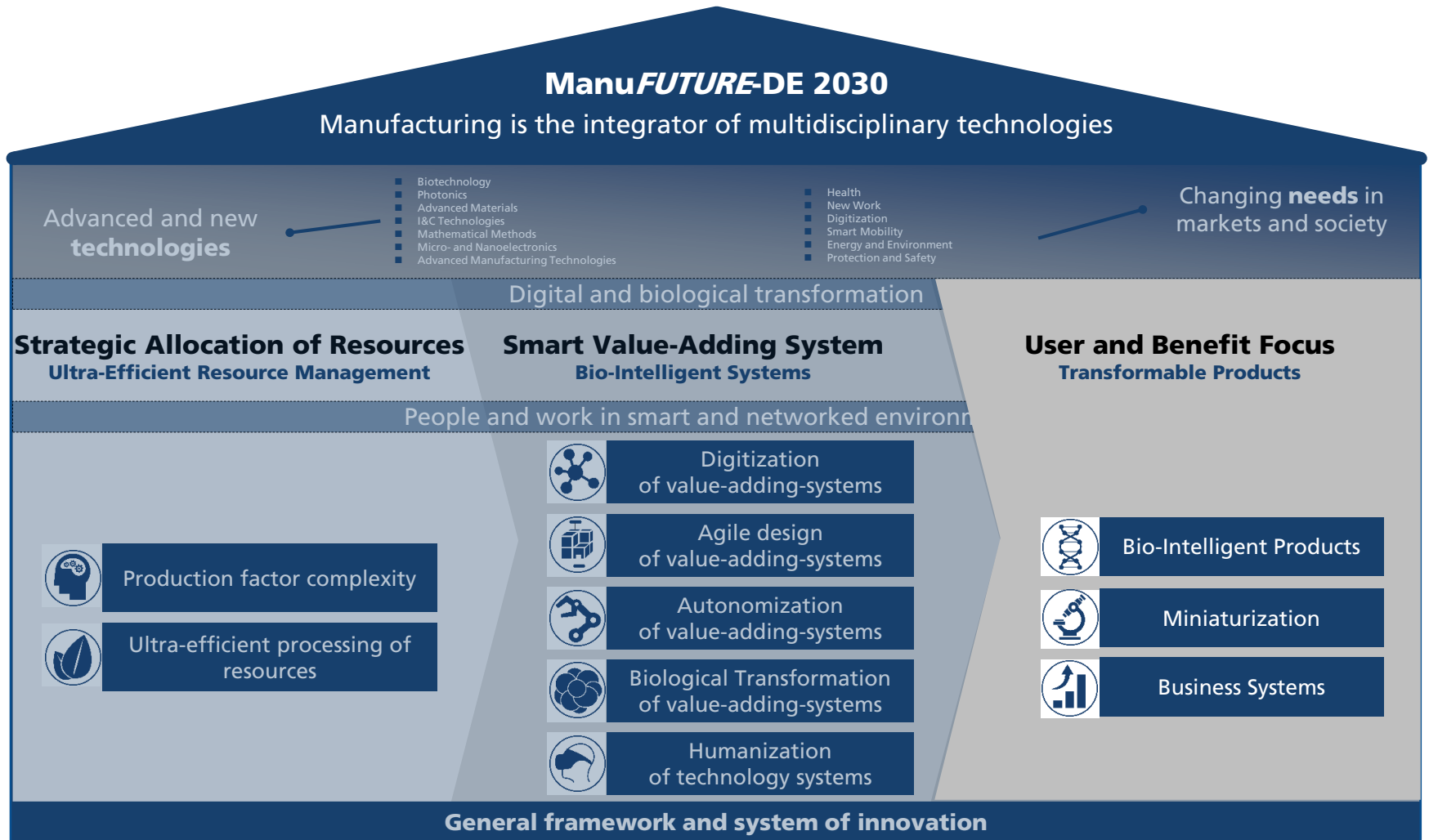
35 thematic fields

279 identified research topics



Example of the results

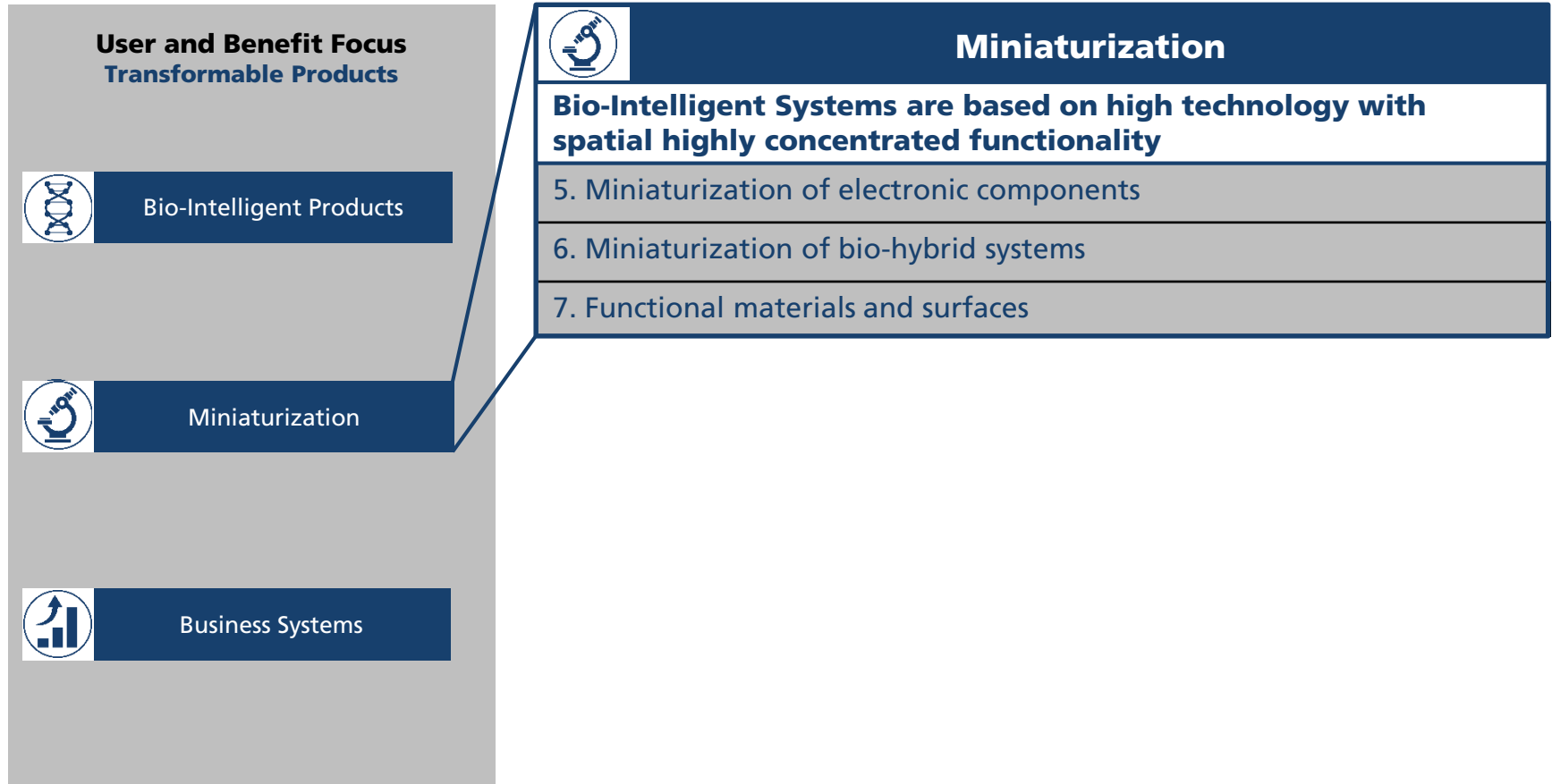
User and Benefit Focus



Example of the results

Field of action and thematic fields

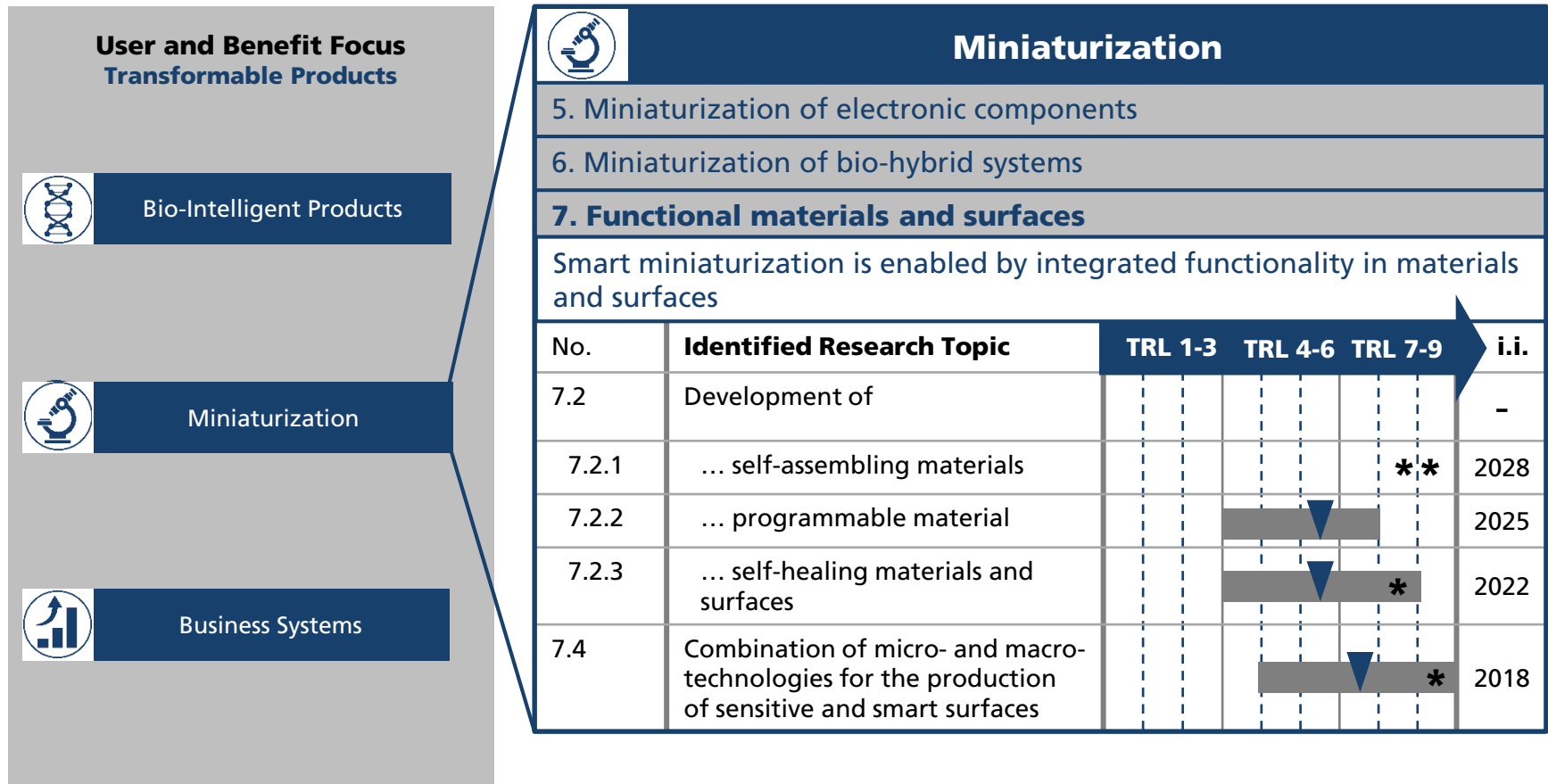
Miniaturization



Example of the results

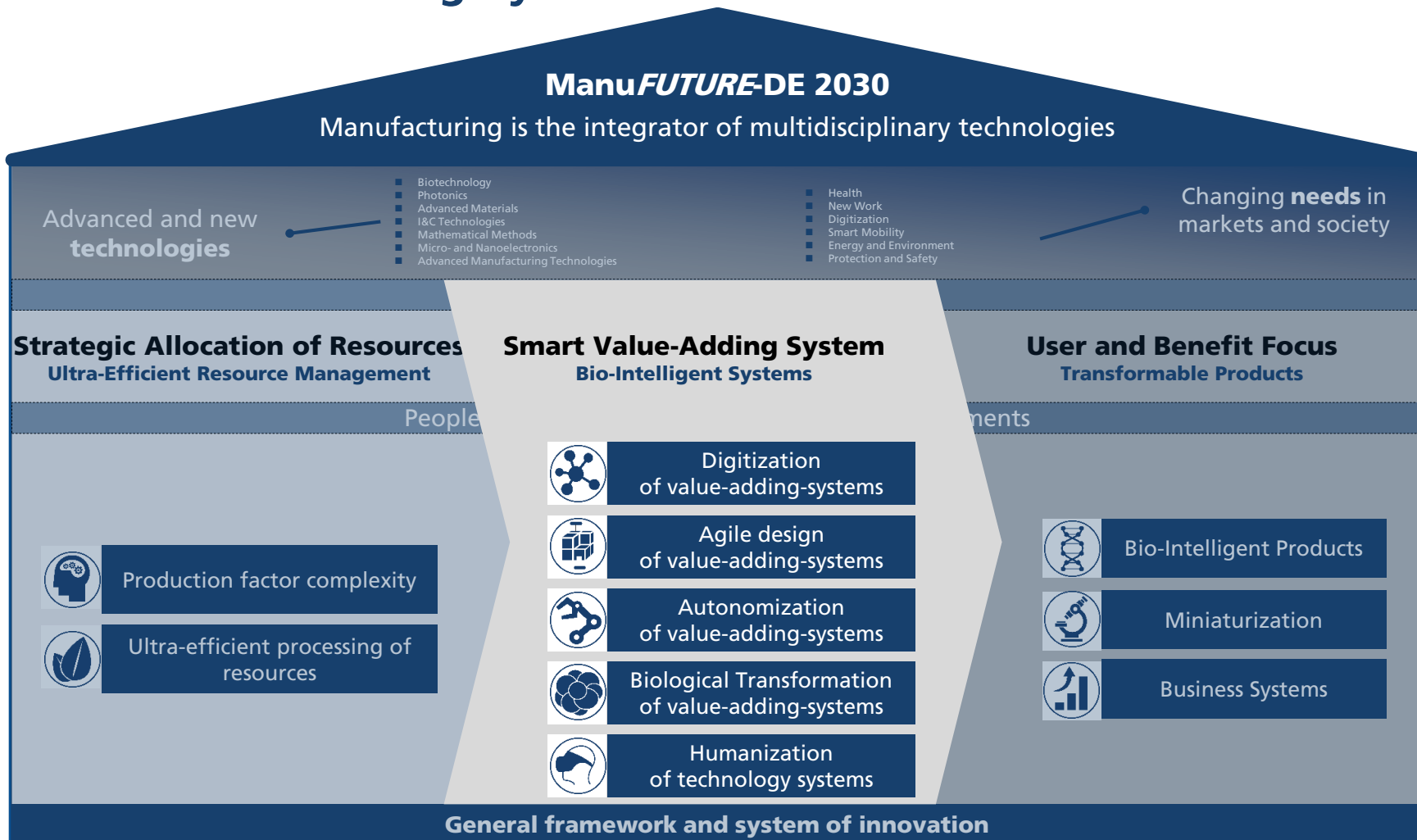
Examples of identified research topics

7. Functional materials and surfaces



Example of the results

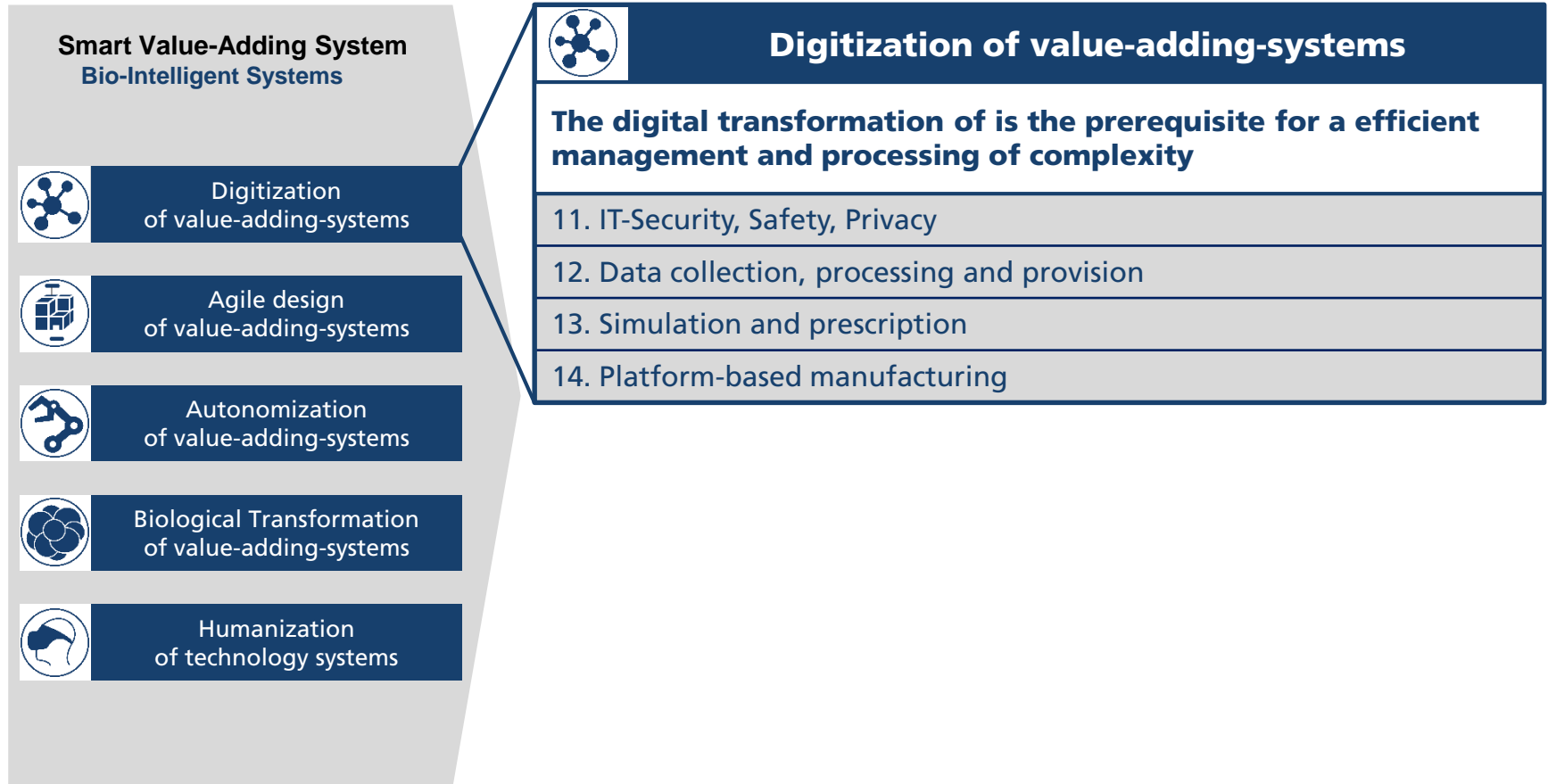
Smart Value-Adding System



Example of the results

Field of action and thematic fields

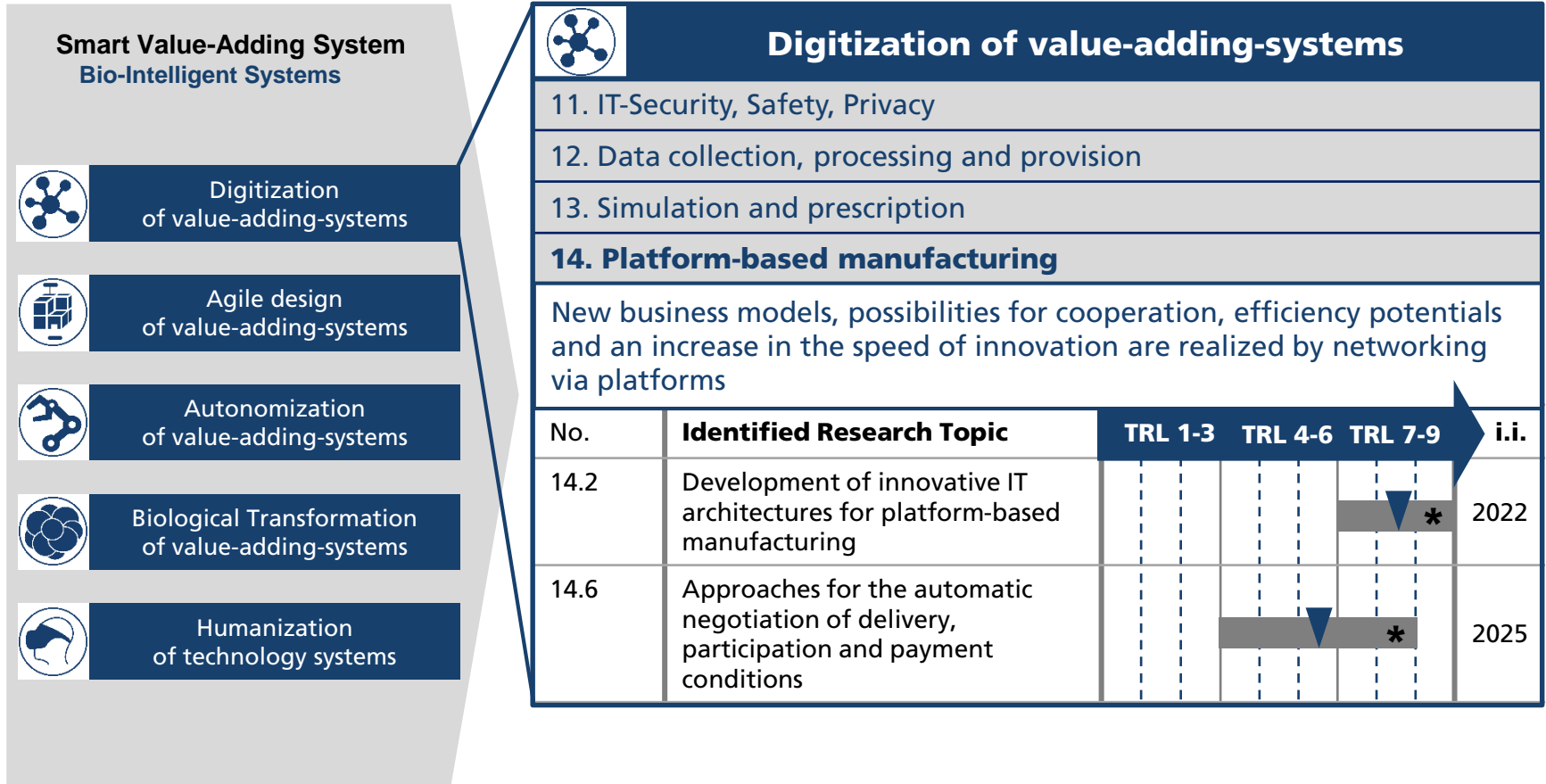
Digitization of value-adding-systems



Example of the results

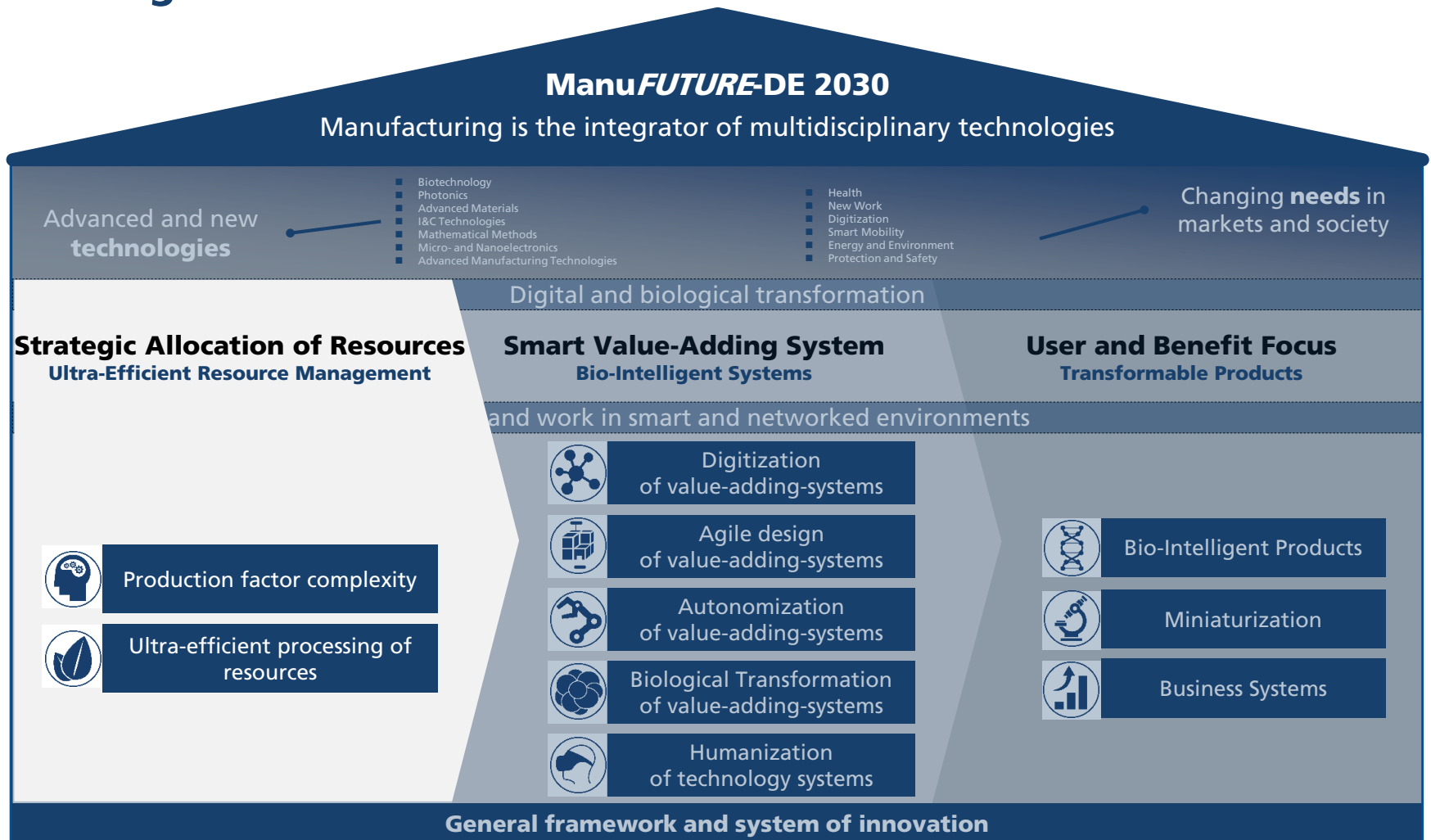
Examples of identified research topics

14. Platform-based manufacturing



Example of the results

Strategic Allocation of Resources



Example of the results

Field of action and thematic fields

Ultra-efficient processing of resources

Strategic Allocation of Resources

Ultra-Efficient Resource Management



Production factor complexity:
human, knowledge,
organization, leadership



Ultra-efficient processing of
resources



Ultra-efficient processing of resources

New technologies enable the decoupling of resource consumption and growth

33. Potentials of energy consumption and utilization

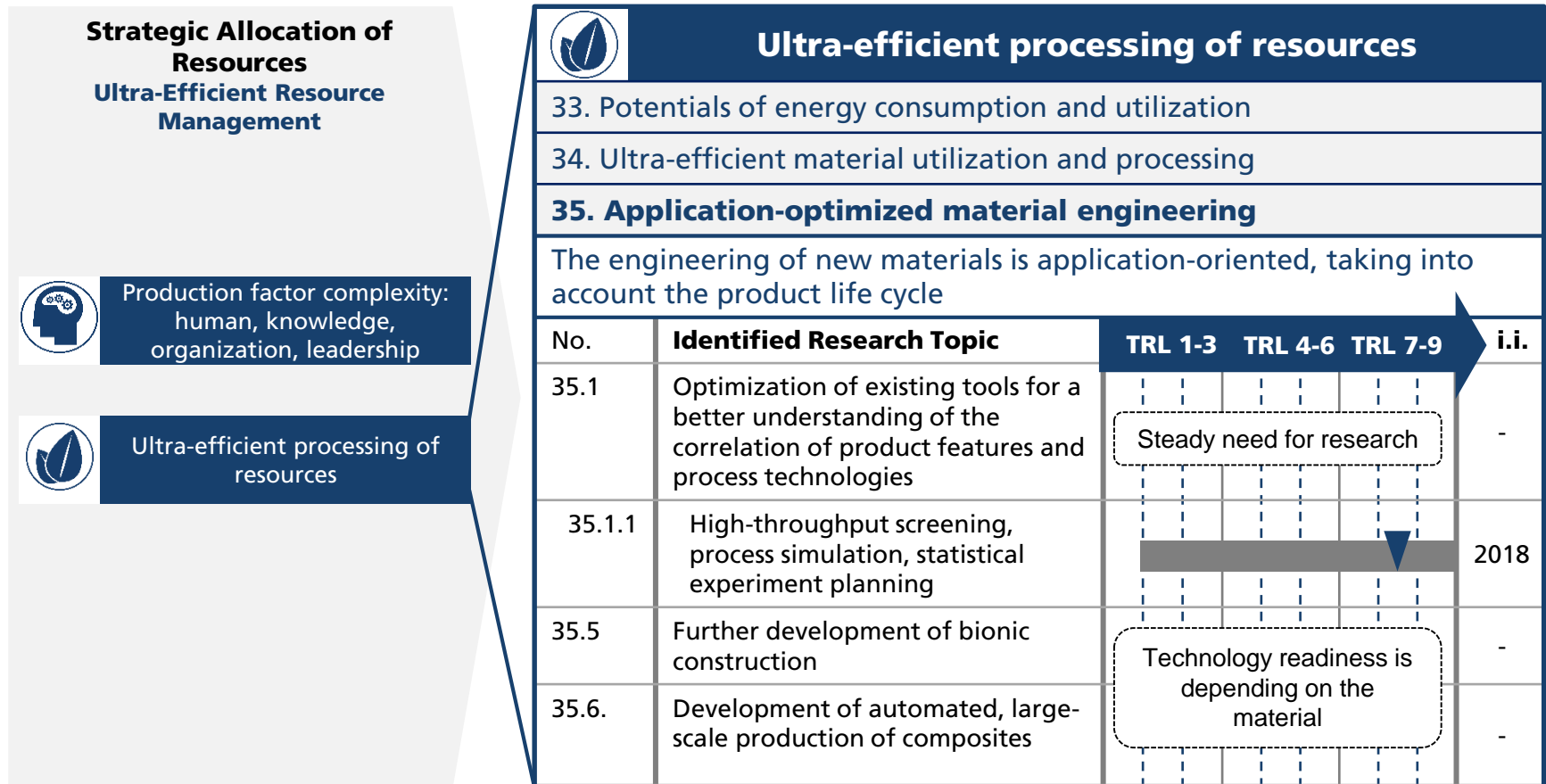
34. Ultra-efficient material utilization and processing

35. Application-optimized material engineering

Example of the results

Examples of identified research topics

35. Application-optimized material engineering



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Thank you for your attention!

Project management ManuFUTURE-DE 2030

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