

SP2: Heterogenous multi-source requirements engineering

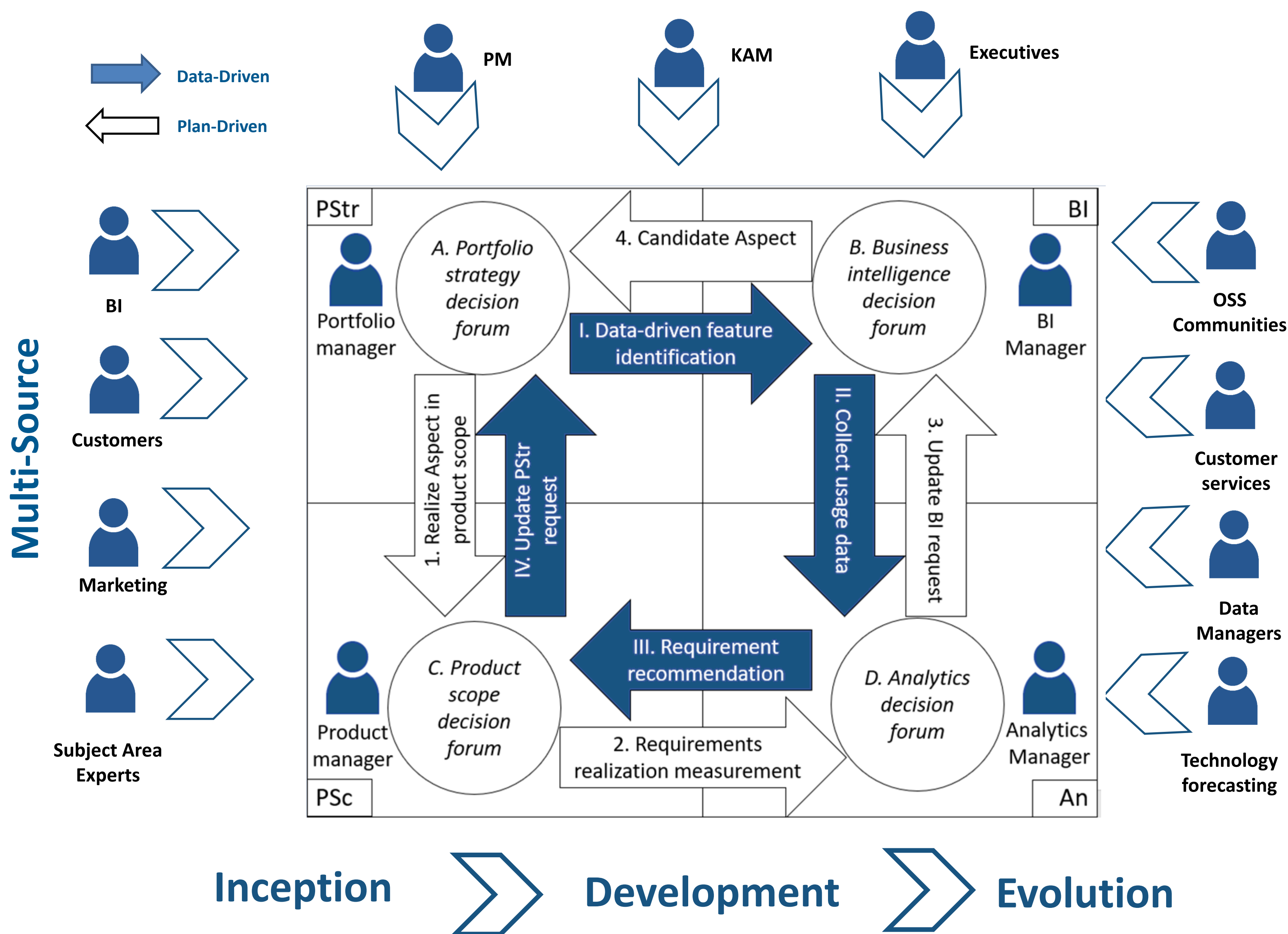
Requirements Engineers overwhelmed with data and information

Companies are exposed to large amounts of heterogeneous data from multiple-sources. This challenges requirements identification and concretization and creates demands for revisiting requirements management activities. Software components also generate data as they are context-aware and self-adaptive in response to contextual fluctuations (so called non-deterministic behaviour).



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Multi-source data-driven RE (MSDDRE)



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Previous experience

K. Wnuk, T. Gorschek, and S. Zahda, "Obsolete Software Requirements," *Inf. Softw. Technol.*, vol. 55, no. 6, pp. 921–940, Jun. 2013

B. Regnell, R. B. Svensson, and K. Wnuk, "Can we beat the complexity of very large-scale requirements engineering?," in *International Working Conference on Requirements Engineering: Foundation for Software Quality*, 2008, vol. 5025 LNCS, pp. 123–128

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MSDDRE Framework

- **WHAT:** Support the inception, realization and evolution phases of software systems development
- **HOW:** Extend current RE techniques by efficient data acquisition and analysis approaches and machine learning.
- **STAKEHOLDERS:** Product management, Requirements Engineers, Data Engineers,
- **WHEN/HOW LONG:** Product inception, realization and evaluation, continuous support

Planned Outcomes

We will revisit requirements engineering activities and focus on how we can transform them to be more data-intensive and better support:

- data collection and problem formulation (intelligence, identifying relevant data sources, filtering relevant information from non-relevant)
- development of requirements realization alternatives (prioritizing these opinions and presenting them for decision-makers)
- evaluation of these alternatives (semi-automated analysis of product usage data and user feedback).

