

ESFRI Research Infrastructure Innovation Cases – Instruments

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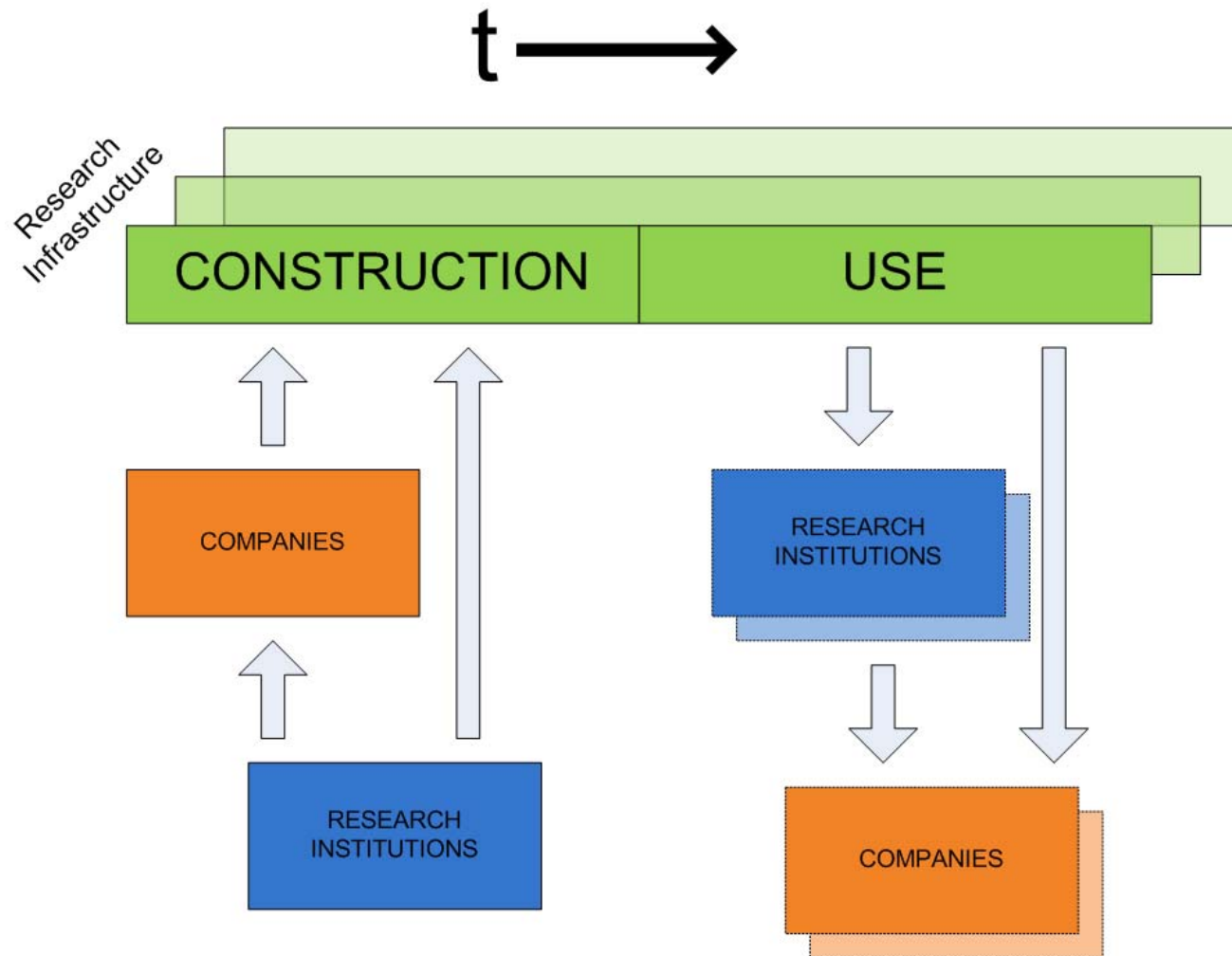
Overview

- Three examples of the effect of large research infrastructure projects on innovation
 - Example 1: Stimulating collaboration between research and industry
 - Example 2: Technology standardization
 - Example 3: Innovative products and business models
- Not a comprehensive overview

Example 1: Stimulating collaboration between research and industry (1)

- Industry as initiator and moderator for Slovenia to join FAIR project
- Started as single company initiative
- Today a pre-consortium of 16 companies and 8 research groups
 - Prerequisite for success: understanding and having appreciation for two different value systems and cultures

Example 1: Stimulating collaboration between research and industry (2)



Example 1: Stimulating collaboration between research and industry (3)

- Slovenian government was responsive
 - 2 years
 - A lot for entrepreneurs (industry)
 - A short period for a government decision
- Not there yet (mostly legal issues)
- Example of a new member state becoming a strong partner in ESFRI
- Platform for joining other ESFRI projects

Example 2: Technology standardization (1)

- Challenges for instruments on some of the future ESFRI projects (XFEL, FAIR, ESRF,...)
 - High availability
 - High reliability
 - Maintainability
 - Broadband connectivity
 - Synchronization of geographically dispersed instruments

Example 2: Technology standardization

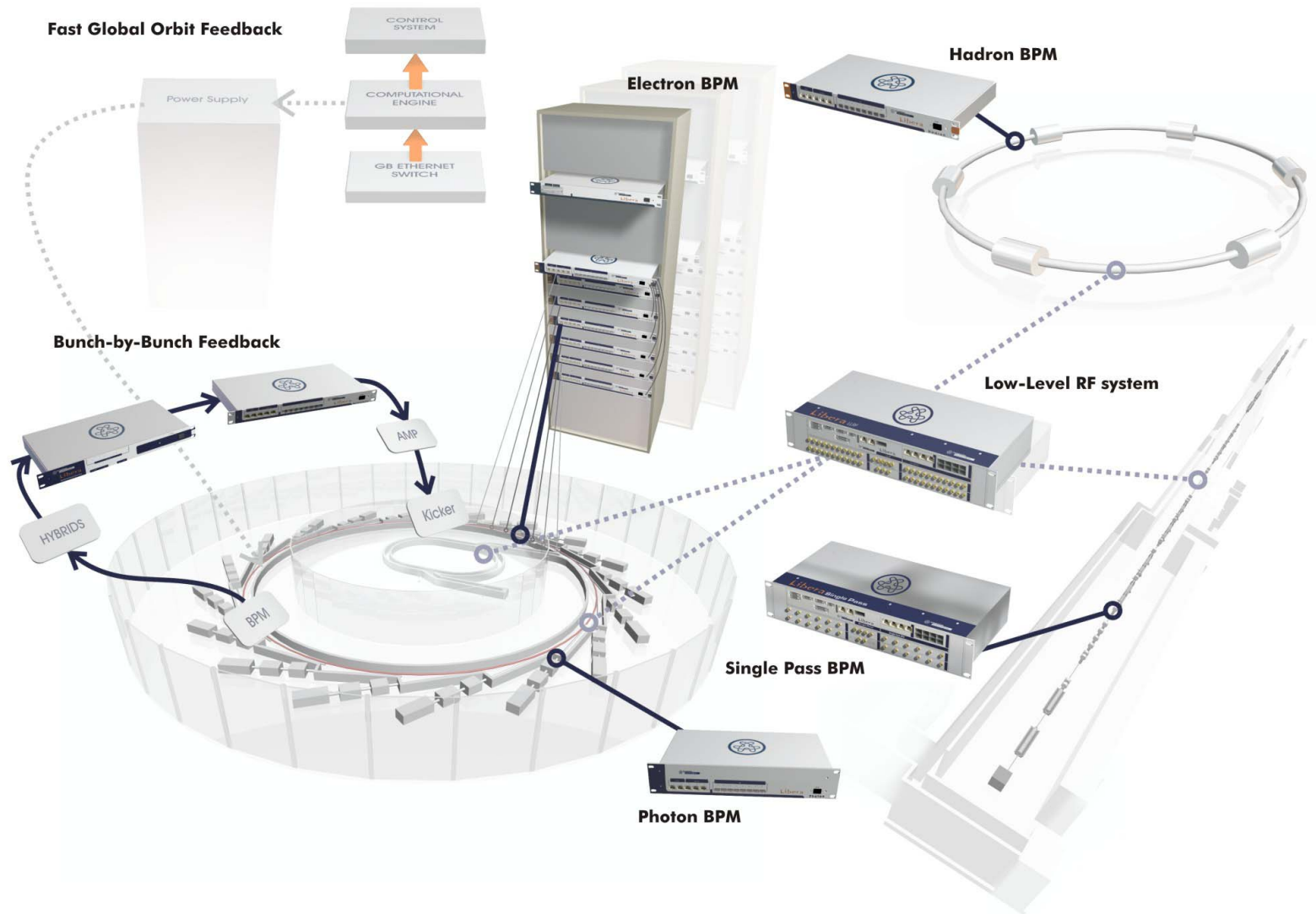
(2)

- xTCA** standardization within PICMG*
- Growing evaluation projects at major labs
 - DESY, SLAC, IHEP, FNAL, ANL, BNL, KEK, CERN, FZJ, IN2P3, IPFN, JET, ...
- Direct interest by funded and future projects
 - XFEL, FAIR, ILC, ITER, JET, ATLAS Upgrade, Project X, AGATA, ...
- xTCA interest both accelerators and experiments

*PICMG: (PCI Industrial Computer Manufacturers Group)

**xTCA: x (Advanced or micro) Telecommunications Computing Architecture

Example 3: Innovative products and business models (1)



Example 3: Innovative products and business models (2)

- “Libera Community”: innovative business model
 - Philosophy
 - »Many Instruments, Many People, Working Together«
 - Open architecture (μ TCA, Linux)
 - Libera Users Meetings (yearly)
 - 3rd was held at ESRF, Grenoble 22 – 23 June, 2009
 - Libera Workshop (yearly in Solkan, Slovenia)
 - 4th was held 13 – 15 October 2008
 - 5th will be held 16 – 18 September 2009



Example 3: Innovative products and business models (3)

- Strong regional effects
 - Enhanced visibility of the region not hosting L.R.I.
 - ELETTRA / Sinctrotrone Trieste 50 km away
 - Building self-confidence
 - Employment growth of high tech workforce
 - Motivation for young to-be researchers and engineers
 - Libera WS as an important yearly regional event

Conclusion / Suggestions

- Europe should develop more absorption capability for bottom-up initiatives
 - Tendency to control too much w.r.t. US
- Finding the right balance between forceful (top-down) and enabling (bottom-up) leadership
- Recognizing bottom-up initiatives as a rich source of new and innovative ideas for European competitiveness