



PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE

HPC access to SMEs

Dominik Ulmer, CSCS

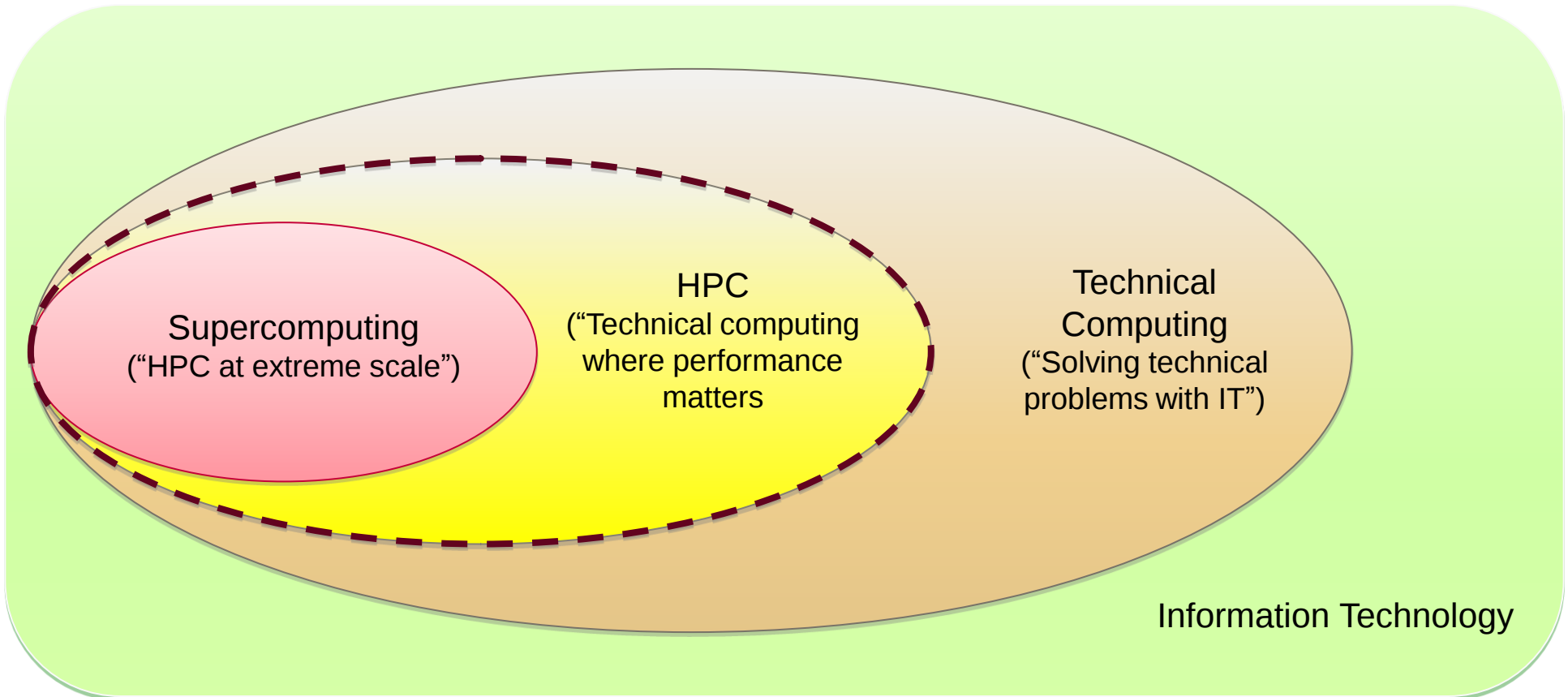


Session information

- Objective
 - Inform SMEs about PRACE and its potential
 - Understand the requirements and needs of SMEs in HPC
 - Help to formulate an industrial offer of PRACE which addresses SMEs, too
- Format
 - Talks
 - Introduction (Dominik Ulmer, CSCS)
 - Example of an SME with HPC needs (Christian Tognacca, Fluvial)
 - Current offer to SMEs by a PRACE member (Mark Parsons, EPCC)
 - Mini-panel discussion with audience

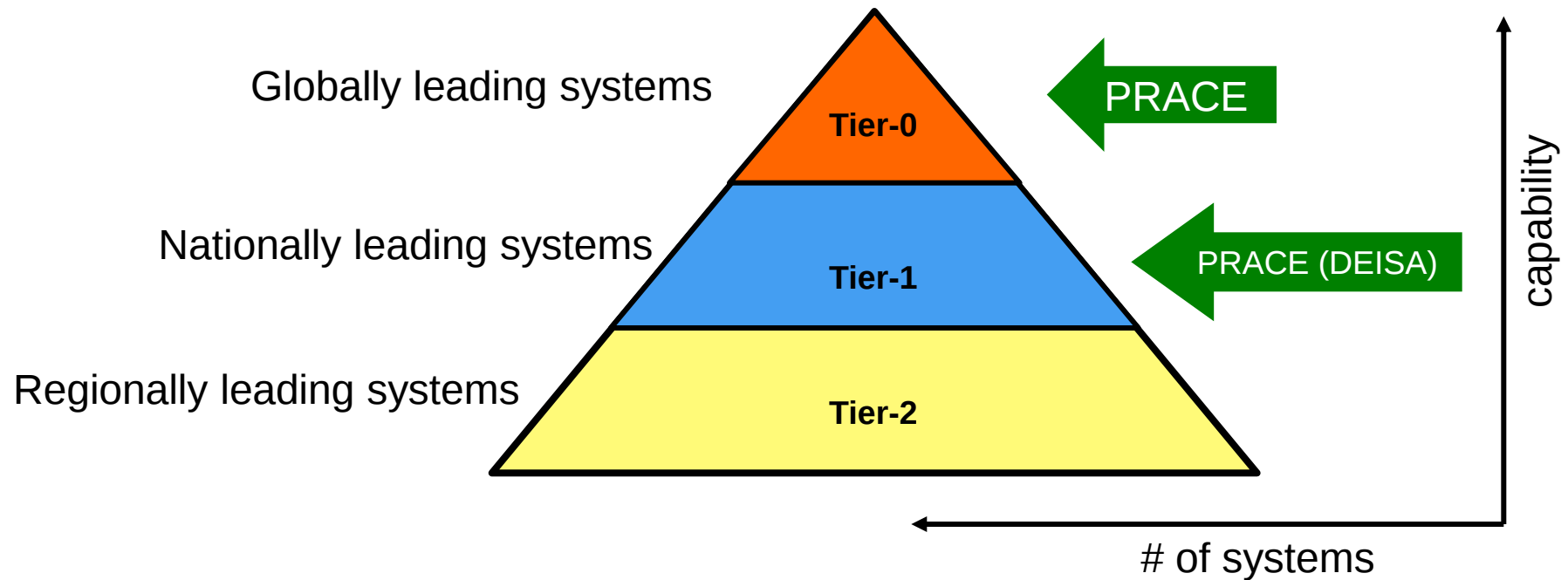
What is HPC?

 European offer by PRACE



Not to scale

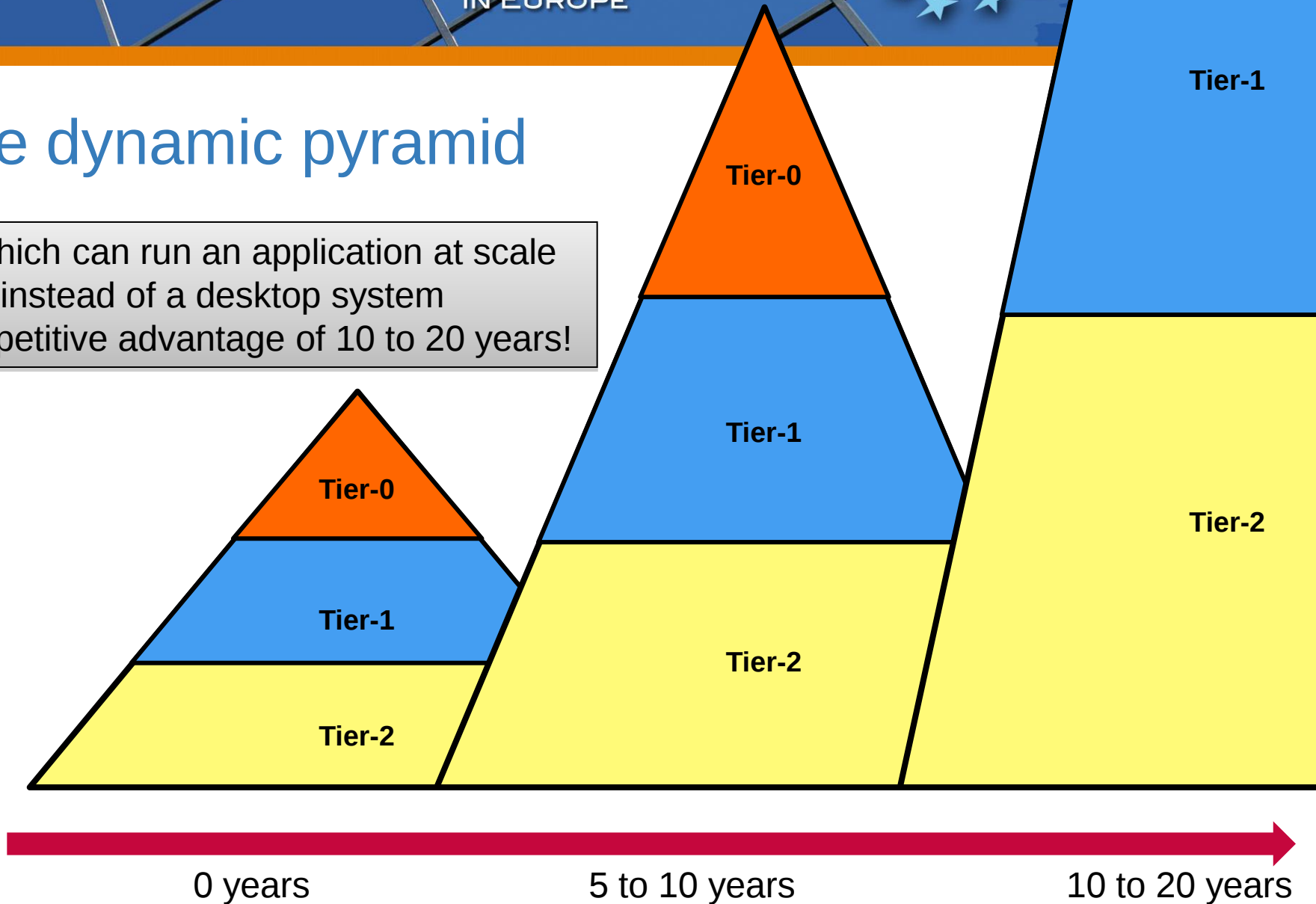
The HPC ecosystem à la PRACE



Desktop Computing

The dynamic pyramid

An SME which can run an application at scale on a tier-1 instead of a desktop system has a competitive advantage of 10 to 20 years!



Obstacles for SMEs (1/2)

- Access to resources
 - Own resources may be too expensive and may be utilised enough
 - Standard cloud resources are not performance-aware
 - HPC centres traditionally require competition on the basis of scientific quality; don't have a business model for industrial use by SMEs
- Confidentiality
 - HPC centres traditionally don't have strong security models
- Architectural difference between desktop and HPC resources

Obstacles for SMEs (2/2)

- Software
 - Commercial, verified software often does not scale; slow in adapting to new HPC architectures
 - Open-source software from research have potential problems
 - Verification, validation for commercial purpose
 - Sustained development which incorporates requirements from industry
 - Versioning
 - Licensing
- The HPC attitude
 - We want big projects and want to work with the big guys
 - Constant change instead of continuity