HPC services through the cloud for SMEs and academic institutions

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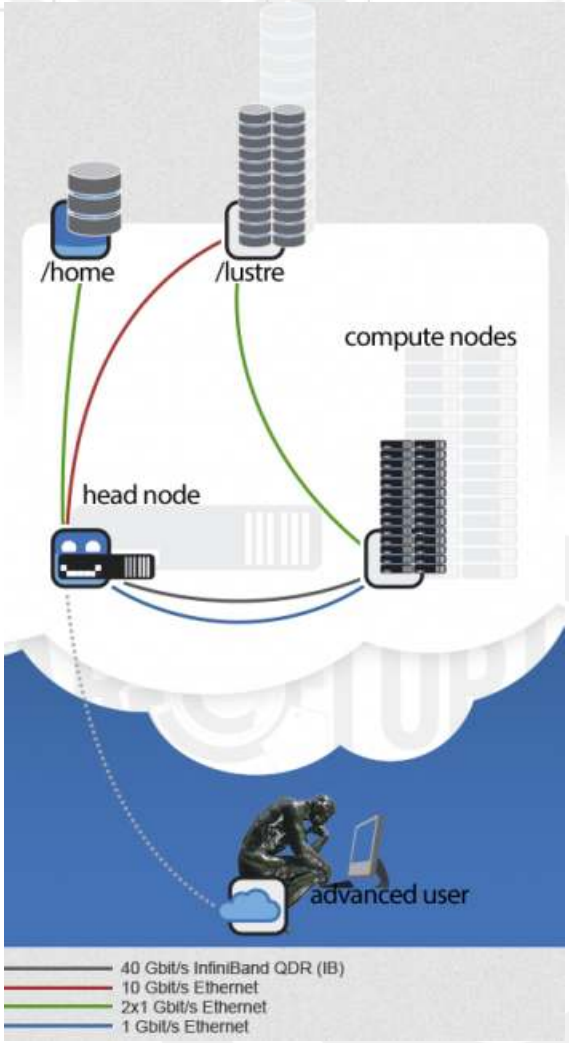
About Arctur (since 1992)

- 25 + 9 employees (as 1st January 2013)
- income from services >1,4 M€
- R&D department (8 researchers & 5 PhD students, inovations, patents)
- 4PM (Project Management Software – 12.000 users, 5 languages, awards)
- High Performance & Cloud Computing

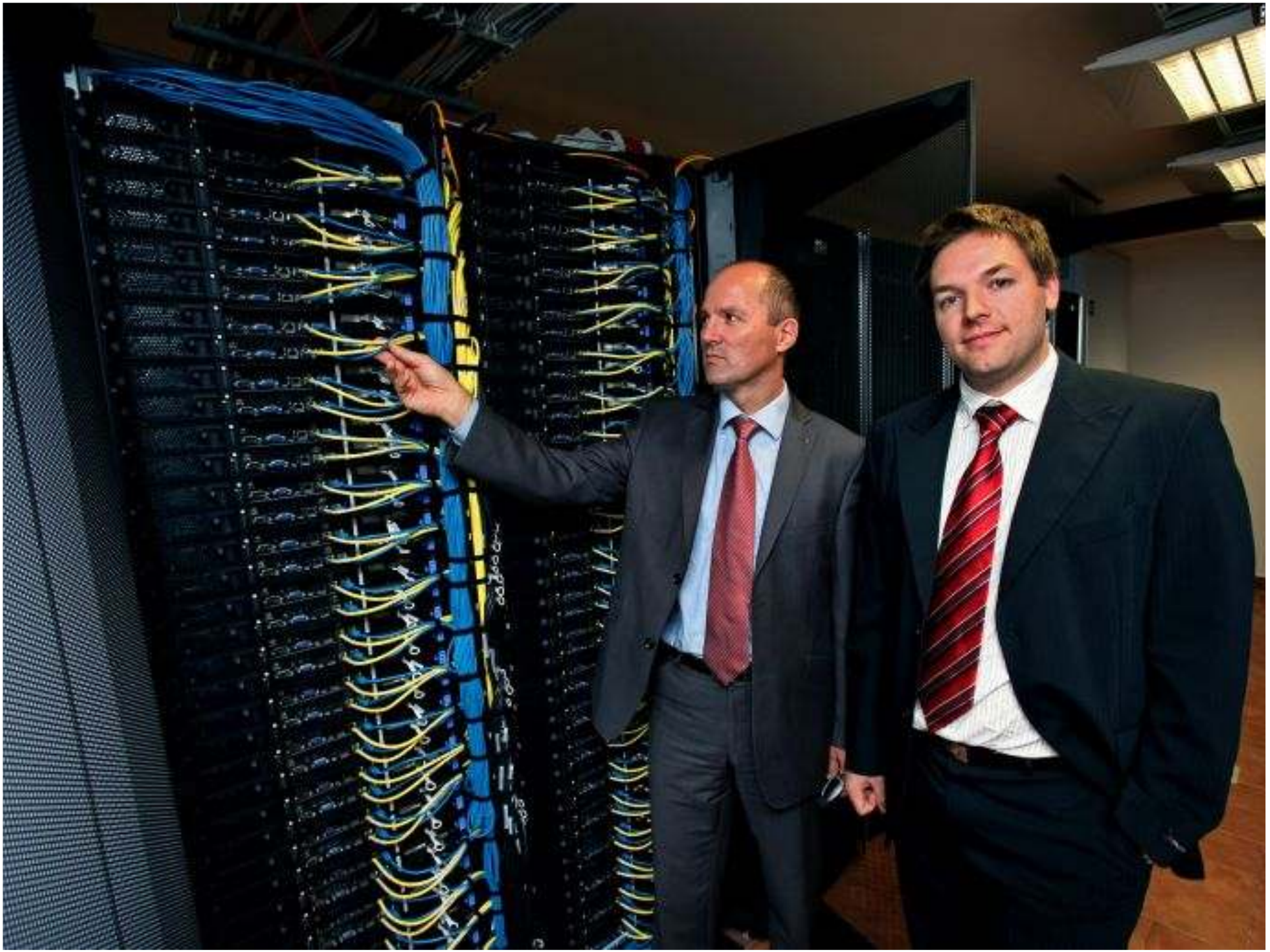
Why offer HPC services?

- there is no real **science** without HPC
- industry needs high **Added Value** products & services
- we live in a world of **video/animation** production
- we want to **predict & simulate** everything (weather, stock market, health, insurance risks…)

How should we do it?



- **user-centered** workflow
- traditional **user-shared** physical hpc system
- virtualized **user-encapsulated** infrastructure
- **remote visualization** platform
- **security & trust**



HPC 4 researchers

1. price and performance negotiations
2. deployment of user SW
3. computation
4. pay the bill ;)

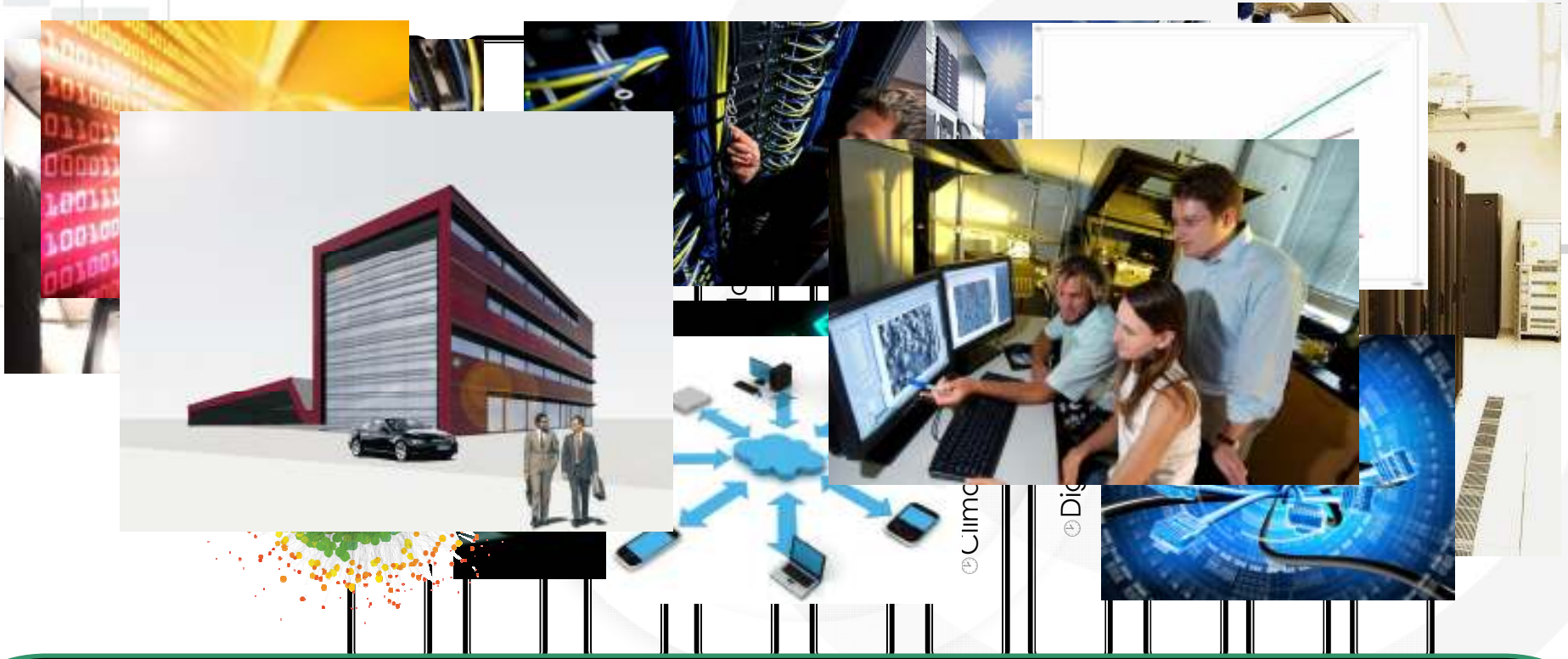
HPC 4 SMEs

-4. searching for an appropriate SME
-3. building the demand (ideas)
-2. searching for the right academia partner
-1. searching for the proper SW (licensing?)
 0. optimize SW and prepare it for remote usage
 1. price and performance negotiations
 2. first computation for FREE (trial usage)
 3. high-priority computation (extra charge)
 4. long term storage of user data and results
 5. pay the bill (hopefully) and hope they will come again ;)

One of our's SMEs

Pipistrel Slovenia: Pipistrel is a proficient user of CFD tools in a parallel environment (primarily OpenFOAM), using it to analyze performance of all its new designs as well as contract work for external clients. They also developed its own optimization codes for the design of airfoils, wings and propellers, using simplified aerodynamic models such as panel methods and lifting line theory.

www.pipistrel.si



HPC^5

- HPC^5 Centre
- Competence Centres
- Business Incubator

Competences

- Paralellization & code optimization
- HPC Configuration& Deployment
- Performance & Scalablility Benchmarking
- Mathematical modeling and advanced statistics
- HPC and Cloud Software Development
- Networking and Related Services

Infrastructure

- HPC
- Hardware & Software
- Cloud Infrastructure
- Data Centers
- Connectivity
- Fiber-Optic Network

How can EU help?

+ obviously it can since our own HPC center was partly funded by EU funds

+ FP7 and upcoming Horizon2020 project funding

+ Fortissimo as one of the most important EU projects for delivering HPC services to the SME's

- however … EU also funds our „competition": PRACE is a very capable HPC infrastructure, giving CPU hours for scientists „for free"

- EGI - EU GRID Infrastructure

THANK YOU FOR YOUR ATTENTION!

Questions?

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