Computing R&D

Peter Elmer
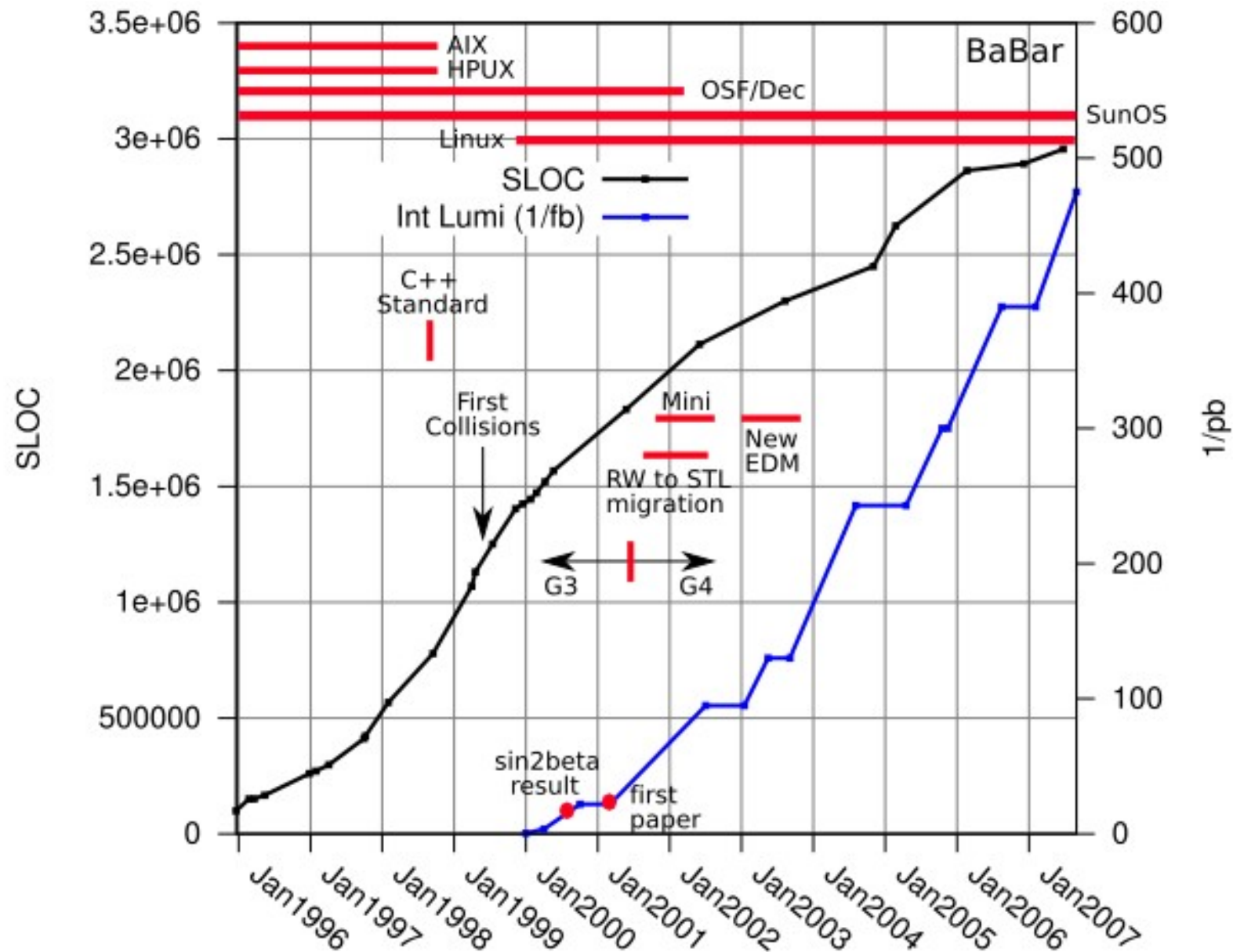Princeton University
SuperB Workshop and Kick-Off Meeting
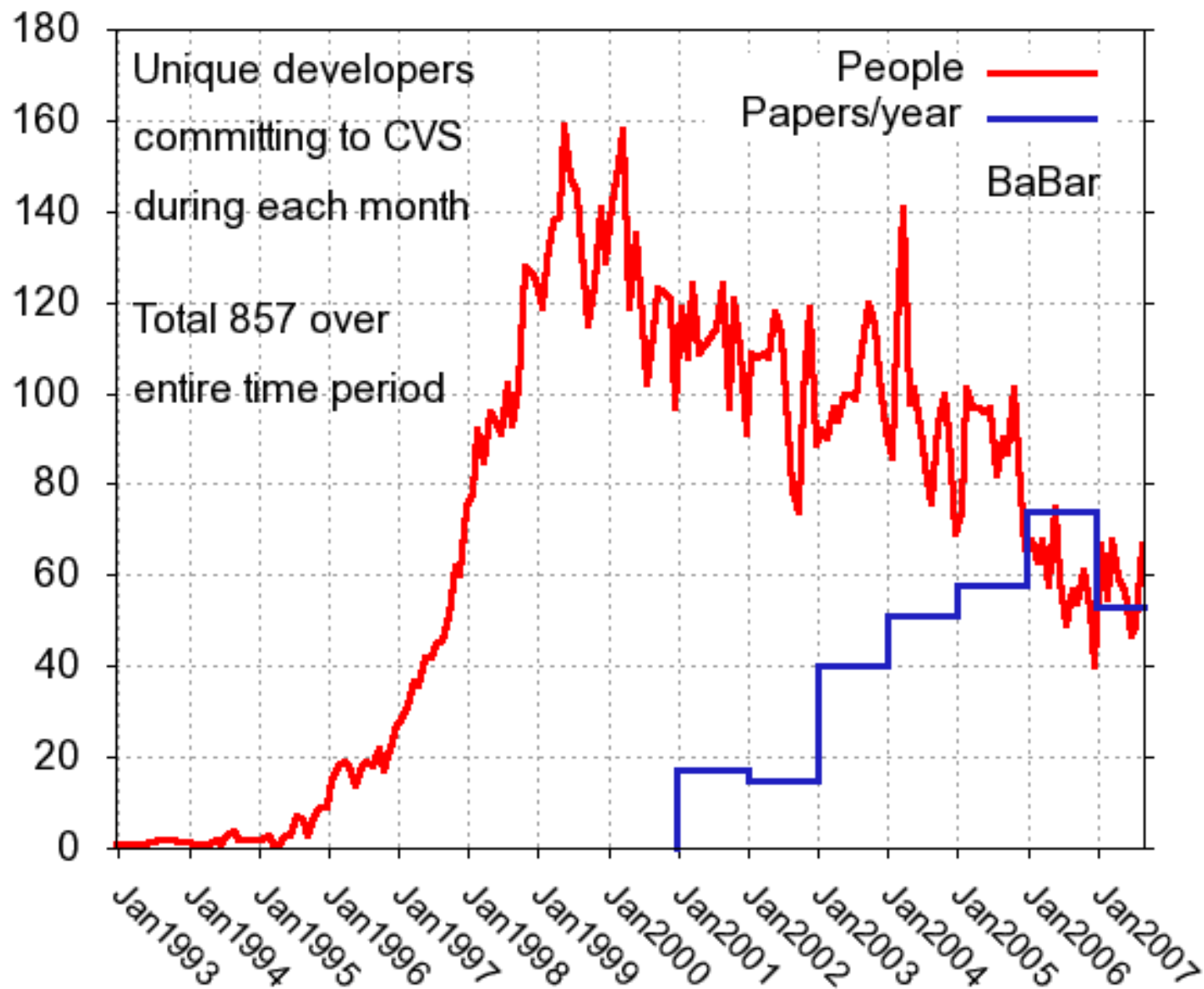La Biodola
1 June, 2011
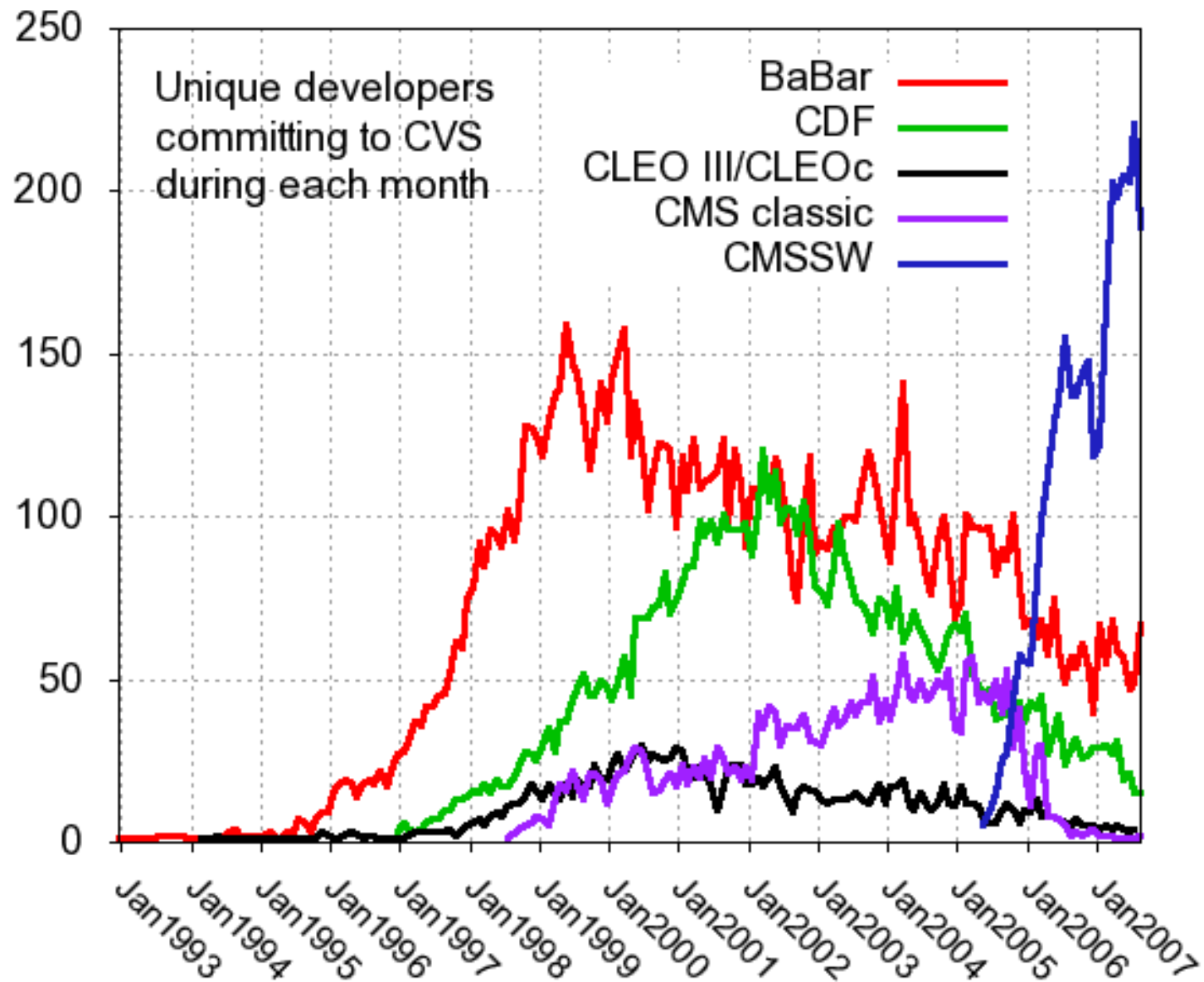
BaBar evolution

BaBar evolution

Unique developers committing to CVS during each month

Total 857 over entire time period

People — (red)
Papers/year — (blue)

BaBar

Various experiments

Unique developers committing to CVS during each month

Legend:
- BaBar (red)
- CDF (green)
- CLEO III/CLEOc (black)
- CMS classic (purple)
- CMSSW (blue)

R&D Areas

- Area 1: General Computing Requirements

- Area 2: Software development and framework architecture

- Area 3: Impact of new CPU architectures

- Area 4: Persistence, data handling models and databases

- Area 5: Distributed computing

- Area 6: User tools and interfaces

- Area 7: Performance and efficiency of a large data store

- Missing: Generators, Simulation

- Proposed: monitoring?, networking? (Napoli)

Area 1: General Computing Requirements

- Activity 1.1: Model of cost and technology trends relevant for SuperB in 2015-2020

- Interested: Fabrizio, Steffen, Giacomini, Napoli

Area 2: Software Development and Framework Architecture

- Activity 2.1: Software quality and coding standards

- Activity 2.2: Software Development Model

- Activity 2.4: Software management and release build system

- Activity 2.6: Software deployment and installation

- Activity 2.7: Supporting different programming languages

- Activity 2.8: Supporting multiple compilers, platforms, OS

- Activity 2.9: Adopting legacy code to SuperB standards

- Activity 2.10: Code sharing between Online and Offline

- Interested: Roberto/Marco (2.4), Silvio

Area 2: Software Development and Framework Architecture

- Activity 2.3: Framework architecture

    – Dependent on Area 3 activities (next slide), etc.

- Activity 2.5: Implementation of the infrastructure

    – Dependent on Area 2 activities (previous slide)

- Interested:

Area 3: Impact of new CPU Architectures

- Activity 3.1: Impact on production activities and event processing framework

- Activity 3.2: Impact of new CPU architectures on final user analysis

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- Interested: Rolf/Cincinatti, Padova (Roberto/Stefano/Marco), Giacomini/Ciaschini (CNAF), Napoli

Area 4: Persistence and data handling models and databases

- Activity 4.1: Event persistence and data handling models

- Activity 4.2: Conditions DB, Bookkeeping DB and Generator DB

- Interested: Armando/Luca (4.2)

Area 5: Distributed Computing

- Activity 5.1: Grid infrastructure evolution

- Activity 5.2: New technologies integration in distributed environment

- Interested: Bari, Ferrara, Napoli, Armando

Area 6: User tools and Interfaces

- Activity 6.1: Job Configuration and User Interfaces

- Activity 6.2: Datasets and Data Duplication

- Activity 6.3: Documentation and Training

- Interested: Andrea (6.1), Luca (6.2)

Missing Items?

- Generators?

- Simulation?

- (Proposed): monitoring (Napoli)

- Networking (?)

Area 7: Performance and efficiency of large data store

- Activity 7.1: ??
- Activity 7.2: Decentralized data storage architectures
- Interested: Bari (Giacinto/…), Ferrara, Napoli, Silvio/Armando