

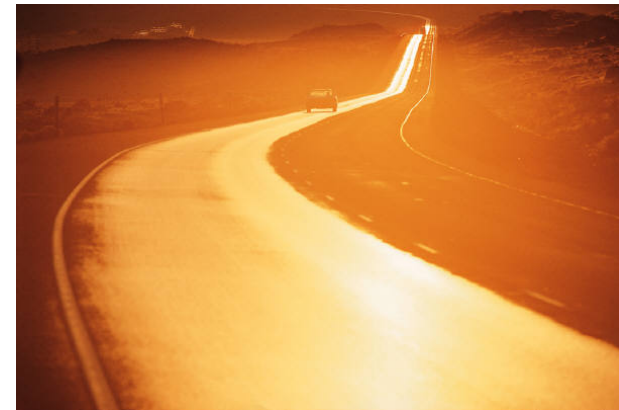
**Software – The gap between innovation
and service
Lessons Learned in GN3**

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SWITCH/GN3 SA2

Innovation Workshop Oct 2011

- GN3 Multidomain Services
 - Connectivity and monitoring services
 - Wavelengths, Bandwidth on Demand, Monitoring
 - To be deployed in a federated context
 - To be globally interoperable
 - Innovative services are not always in a stable technical environment
- GN3 Tools – AutoBAHN, I-SHARe, cNIS, AMPs, perfSONAR MDM
 - Inherited prototyped & deployments from GN2
 - *43 components for perfSONAR alone*
 - Initially no explicit linking of tools development to service



Development Challenges for Services



Service Definition
Operational Model

Prototype Code
Scalability
Performance
UI flexibility
Ability to Respond



Prototype vs
Production

Development
process

Staffing and
management

The Perils of Prototypes in Production



<http://www.flickr.com/photos/leprecon/>

Fighting the Culture of "Bad is Good Enough" – Steve Cotter, Esnet, TNC2011 – OSCARS 0.6

- Modular
- Production Quality
- Clearly defined APIs
- Rigorous Testing
- Observe how it is used
- Stick to schedule

DISCUSSION





- Lots of buzzwords
 - AGILE
 - Waterfall
 - OpenUP
- Lots of ideology
 - “Open Source”
 - “Commercial”
- No magic bullet
 - No one system is designed for us

Case study – GN2 + GN3



~~One language to rule them all!~~

~~Minimize co-developed code~~

~~One release per year~~

Split software governance from developers on the ground

AGILE(ish) development

On the ground developer management

DISCUSSION



Staffing and Management Challenges



- Delivery is a rocky road
 - We have talented people
 - We have world class networks and services
 - Despite this we face problems delivering collaboratively
 - *Defined quality*
 - *On time*
 - *“Boring” operational support*
- *Fragmentation makes life hard*
 - *Good developers get oversubscribed*
 - *Swapping between projects makes it hard to be consistent*
 - *Developers sometimes only 1 day a week!*
 - *The nearest/loudest/most pleasing manager wins*
 - *And each GN3 developer has min. 3 of them!*



A personal wishlist



- Dedicated developers & dev managers
 - Mindset
 - Time (at least 50%)
 - Expertise
 - Capable of doing turns at support
 - Working hand in hand with product management
- Flexibility of resourcing
 - Assigning developers 4 years into the future is bad
 - Especially when they are 'tied'
 - Compromises ability to respond to innovation



DISCUSSION



Meet the challenge of federated software development

