Using ECF
for
Lightweight Distributed Team Collaboration

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http://www.eclipse.org/ecf

A few harmless flakes working together can release an avalanche of destruction

http://www.despair.com

Teams they are a changin'

- Membership
  - Distributed
  - Cross-organizational/Multi-organizational
  - More Diverse Skills, Backgrounds, Cultures
- Project Organization
  - Flat(ter)
  - Voluntary
  - Members Have More Control
- Community Expectations
  - Open Planning
  - Responsiveness
    - Bug reports
    - Contributions
    - Newsgroups, Mailing Lists, IRC, etc.

Technology for Today's Teams

- Interoperability
  - ◆ Multiple protocols, multiple clients, multiple services
- Integration
  - ◆ Reduce complexity
- Extensibility
  - ◆ Customizable
    - ▪ Processes and conventions
  - ◆ Team-specific Tools
  - ◆ Dynamic discovery of services between peers

ECF Goal

Lower Barriers to Team and Community Communication

by providing

Interoperable, Integrated, Extensible Framework

Team Productivity: Diversity Trumps Ability

The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools, and Societies

- Conditions
    - High-performing individuals
    - Difficult problems
- Good Diversity
- Bad Diversity (?)

Scott E. Page

THE **DIFFERENCE**

HOW THE POWER OF DIVERSITY
CREATES BETTER GROUPS, FIRMS,
SCHOOLS, AND SOCIETIES

Exploit Diversity via Communication

- Make it Easy for 'Outsiders' to Communicate/Contribute
  - ◆ Client Interoperability

- Communicate Publicly and Frequently
  - ◆ Dev Mailing List, Wiki, Bugzilla, IRC, IM/Conference Calls, ECF Collaboration Groups, etc.

- Expose Unfinished Work/Problems
  - ◆ Milestones, Dev Mailing List, Wiki, Bugzilla ALL GOOD
  - ◆ Solicit Contributions
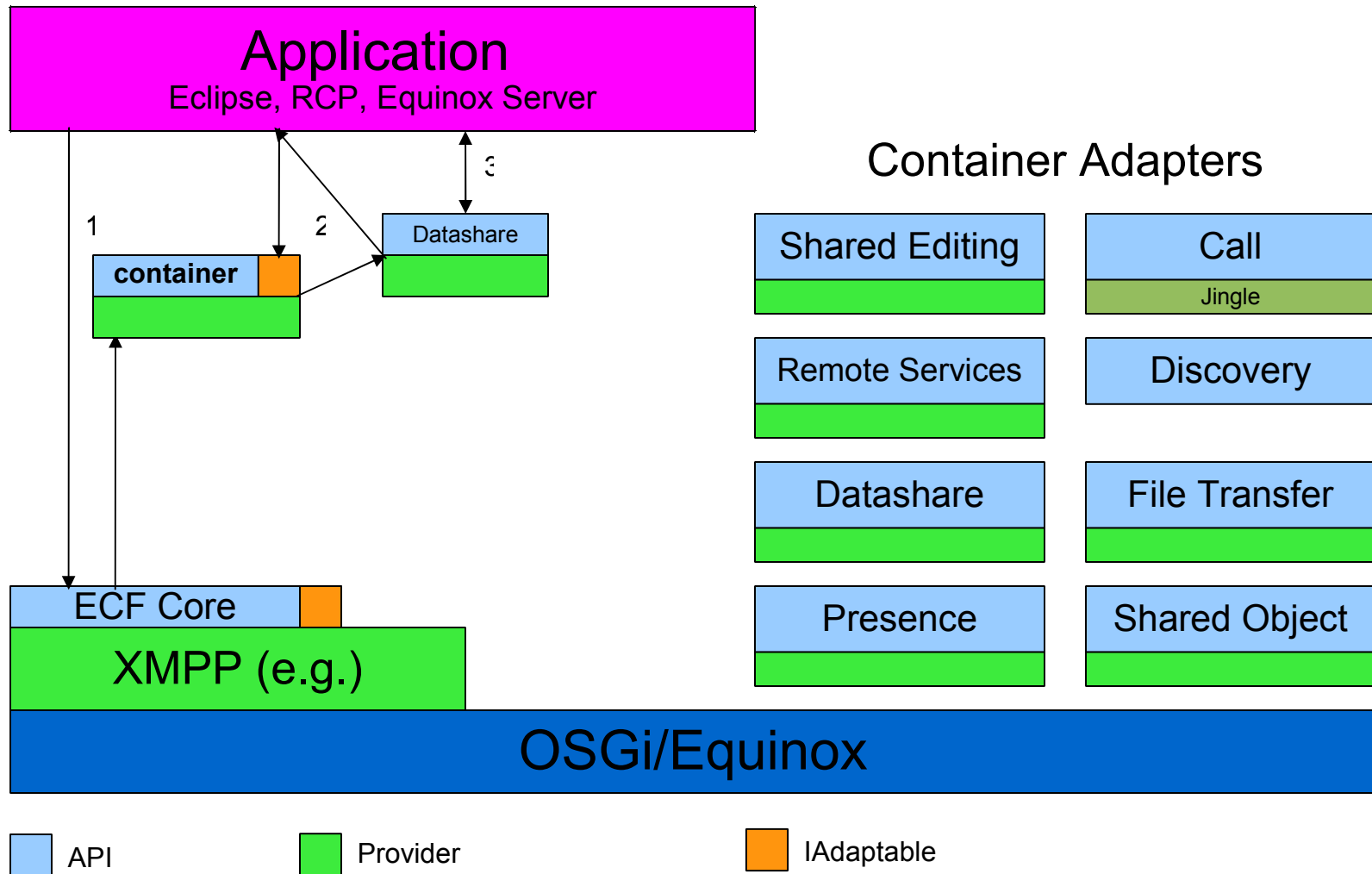   - ▪ Bugzilla/BugDay/IRC, etc.

Can Absence Make a Team Grow Stronger?
Ann Majchrzak, et. al.

- Rule 1: Exploit Diversity

- Rule 2: Use Technology to Simulate Reality

  - ◆ Virtual Spaces for Team and Community

- Rule 3: Build Trust

  - ◆ Member-to-Member

  - ◆ Member<->Community

Demos

Code

```
IContainer container =
  ContainerFactory.getDefault().createContainer();


IChannelContainerAdapter adapter = (IChannelContainerAdapter)
  container.getAdapter(IChannelContainerAdapter.class);


IChannel channel = adapter.createChannel(...)
```

Asynchronous File Transfer

- org.eclipse.ecf.filetransfer
  - ◆ API
    - Asynchronous notifications to listener
      - ✦ Start,Data,Done
  - ◆ Providers
    - URLConnection (JRE)
    - Apache httpclient 3.0.1,
    - SCP/SSH
    - Bittorrent
    - EFS
  - ◆ Receive, Send, Browse
- Used for p2 (new install/update)

Discovery API

- o.e.ecf.discovery.IDiscoveryContainerAdapter
  - query for known/available services
    - synchronous: getServices()
    - asynchronous: add/remove a service listener and get notified about service discovery/undiscovery
  - register/unregister a service
  - Unified API that abstract from discovery protocols
    - Not limited to the LAN!
- o.e.ecf.discovery.IServiceInfo & IServiceType
  - The actual service

Discovery Providers

- Network based discovery
    - SLP (based on jSLP with BSD-ish license)
    - ZeroConf/Bonjour (Apple Corp. but OpenSource?!)
    - LocalDiscovery (client driven discovery)
    - ManualDiscovery (user driven discovery)
    - Framework helper (pluggablity of providers)
        - CompositeProvider
        - SingletonProvider
- Filesystem based discovery
    - „auto-configuration plugin" (GSoC ´07)
        - Use case: Find e.g. a JDK on the local harddrive
        - Uses heuristics to be efficient

In the future

- Advanced (not just a context menu EP) ServiceView with extensible EMF model

  - Persistent storage of services

  - Screencast DEMO or screenshots to save time?!

- jSLP 2.0 (Directory Agent „DA" support mostly)

  - Support beyond subnet discovery

- Enhancements to SLP rfc

  - Efficiency & features

- providers for new protocols

  - Your SoC ideas :-)

Remote Services

- org.eclipse.ecf.remoteservice
  - ◆ API
    - ▪ **Clients have choice**
      - ✦ **Proxy**
      - ✦ **IRemoteService**
        - ★ Asynchronous (Listener) Invocation
        - ★ Futures
  - ◆ Providers
    - ▪ R-OSGi
    - ▪ JMS - ActiveMQ/BEA
    - ▪ ECF generic
    - ▪ JavaGroups
    - ▪ Riena
    - ▪ Others (?)

ECF Team Communications

Team Communications

- ◆ Build Diversity, Trust, and Community

- ◆ Technology Aids

  - ▪ Interoperability

  - ▪ Integration

  - ▪ Extensibility

- ◆ Project: http://www.eclipse.org/ecf

- ◆ Wiki: http://wiki.eclipse.org/Eclipse_Communication_Framework_Project

- ◆ IRC: irc://irc.freenode.net/eclipse-ecf

Long Way to Go!