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 (?)
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
ECF Provider Architecture

Application
Eclipse, RCP, Equinox Server

Container Adapters
- Shared Editing
- Call
- Remote Services
- Discovery
- Datashare
- File Transfer
- Presence
- Shared Object

OSGi/Equinox

ECF Core
XMPP (e.g.)
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 representation
Discovery Providers

• Network based discovery
  - SLP (based on jSLP with BSD-ish license)
  - ZeroConf/Bonjour (JMDNS with LGPL)
  - LocalDiscovery (client driven discovery)
  - ManualDiscovery (user driven discovery)
  - Framework helper (pluggability 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 (DEMO)
  ✷ Persistent storage of services
• SLP rfc & jSLP 2.0
  ✷ Efficiency & features
  ✷ Directory Agent „DA“ support mostly
• Providers for new protocols
  ✷ Query a remote OSGi runtime for services
  ✷ Your (GSoC) ideas :-)

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

Long Way to Go!