Enhancing Awareness and Coordination through Subscriptions

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• Coordination is a key part of any task involving people

• Communication and coordination are among the key problems faced in large software projects (Curtis, Krasner & Iscoe).

• Improve coordination through awareness of one's coworkers:
  • Physical tasks  • On-line tasks  • Projects

• How can one provide the kind of awareness to on-line tasks and projects that is inherent to most physical tasks?
Outline

– Project Awareness
– How can “Push Technology” improve awareness?
– Web based Knowledge Depot
– Lotus Notes Knowledge Depot
– Other Push tools supporting awareness
– Conclusions

Project Awareness

• Awareness between groups of a project to enable them to better coordinate their work.
• Communication links between groups, preferably automated links that require no extra work to maintain.
• Strength of each link depends upon relevance of each group.
Project Awareness: Links

Lawyers
Management
Group E

Designers
Group B

Group C

Customer

Directly Affect Group A
Indirectly Affect Group A

Awareness of What?

- Changes to component’s design or interface
- Changes to completion dates
- Changes to higher level design
- Changes to management
- Changes to customer requirements
- The knowledge that the above changes are being discussed
- The concerns that lead to the discussions
Common Approaches to Providing Project Awareness

- Common techniques for project awareness have severe limitations
  - Email
    - Broadcast
    - Selective
    - Mailing Lists
  - Posting information
    - Bboard
    - WWW
  - Meetings and personal interactions

Defining Push Technology

- Any tool that presents reports of new or modified information to many users, rather than requiring users to constantly check for themselves for new information.
- Users specify what types of information they are interested in
- Tool pushes either
  - events as they occur, or
  - reports of all events over a time period
Subscriptions

- Users specify subscriptions to information relevant to their work:
  - Simple form based preferences
  - Keyword Filters
  - Database Queries and formulas
- Users specify priorities for information:
  - Frequency – Interface – Urgency

Knowledge Depot as a Group Memory

- Knowledge Depot captures email and documents sent to the system or sent to work groups.
- Automatically categorizes information, and recategorizes as users redefine categories over time.
- Enables retrieval of design rationale, and other historical and archived information.
Knowledge Depot as a Push Technology

- Users subscribe to categories of information and specify frequency.
- Depot pushes periodic reports of all new information to arrive in categories.
- Users maintain awareness of topics of work that affect their own work.
Project Awareness: Links

- Designers
- Group A
  - Directly Affect Group A
  - Indirectly Affect Group A
- Group B
- Group C
- Group D
- Management
- Customer
- Lawyers

Lotus Notes Knowledge Depot

Plan for next step: From Jan Abeles; From James M. Daly Jr; To Jan Abeles, To James M. Daly Jr.

Question about release procedure; release notes; release notes

Released Documents; (RD)

replica

Schedule feature; Scheduler; schedule; schedule; delay direct

Subscription feature; (SUBSCR); EOSUBSCR Status Report

--- Definition ---

- 12/31/97 - Bestrix Zimmermann Subscription feature & visit to DRT
- 01/23/98 - Bestrix Zimmermann Re: Subscription feature BUG #1 Access to Firm Coord DB
- 01/25/98 - Bestrix Zimmermann Re: Subscription feature BUG #1 Access to Firm Coord DB
- 01/26/98 - Bestrix Zimmermann Re: Subscription feature BUG #1 Access to Firm Coord DB
- 01/28/98 - Bestrix Zimmermann Subscription feature for you
- 01/29/98 - James M. Daly Jr. - Re: Subscription feature for you
- 01/30/98 - Bestrix Zimmermann Re: Subscription feature announcement 01/30/98

- 02/24/98 - Bestrix Zimmermann Subscription feature...
- 03/10/98 - Michael Kaiser - Subscription feature Trade Hot
- 01/26/99 - NIS-KOADMIN KOSUBSCR Status Report OK
- 01/26/99 - NIS-KOADMIN KOSUBSCR Status Report OK
- 01/26/99 - NIS-KOADMIN KOSUBSCR Status Report OK
- 01/26/99 - NIS-KOADMIN KOSUBSCR Status Report OK
Project Awareness by Monitoring Intranet

- Users can subscribe to any database within their Notes environment. They can monitor any type of information that is handled online:
  - New Information: purchases, timesheets, customers, coworkers, policies, etc...
  - New Communications: bug and status reports, FAQs, email, news letters, etc...
  - Modified Information: changes to calendars, Documents, prices lists, etc…
Study (295 survey responses)

• Pros
  – Users who read messages reported feeling more aware than those who did not.
  – Many users found and retrieved new information that they might not have otherwise found.
  – 69% reported learning
  – 51% followed links.

• Cons
  – Many users did not read the email. (13% of those who read and responded to the survey email)
  – Users were unwilling to figure out how to change default subscriptions, even when they never read any of the reports.

Automating Awareness through Push Technology

• Effort vs. automation: Leverage existing work. Increases perceived benefit/cost.
  – Leverage existing work and work practices
  – Leverage existing interfaces (email, pagers, web)
Related Work

• Elvin/Tickertape
  – Any tool can call Elvin’s API to push information to those who register an interest. A program can monitor any source on internet or intranet and inform Elvin of findings.

• Verity’s IntelliServ
  – Monitors file and web servers, Lotus Notes and MS Exchange databases, and other information sources

Conclusions

• Push Technologies have the potential to increase awareness within groups, projects and organizations.

• Its primary advantage over other approaches is that it minimizes the effort users must invest in becoming aware.
### icnews Category Browser

#### Subscriptions to icnews

| Category | Level of Detail in Subscriptions | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail | Level of Detail 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