
An Enhancement of a Groupware based Workflow and Office Management System

Carsten Huth - Ingo Erdmann - Ludwig Nastansky

University of Paderborn, Germany

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Overview

1. Context
2. Motivation/Starting point
3. Objectives of the GroupProcess-project
4. The GroupProcess-system
5. Conceptual approaches and challenges
6. Architecture and technological aspects
1. Context

- Paperless office environment / virtual communities
  - Office management
  - Computer based teaching and learning
  - Coordination of projects
  - Workflow environments
  - Content management for the chair's website

"We live Groupware"
1. Context: Chronology of projects at GCC (2/2)

Research projects

- GroupOffice
- GroupFlow
- GroupProject
- WAGS
- GroupOrga

Commercial products

- Lotus Domino WorkFlow
- PAVONE Enterprise Office
- PAVONE Espresso
- ONEStone Prozessware
- GroupProcess

Timeline:
- 1990
- 1992
- 1994
- 1996
- 1998
- 2000
2. Motivation/Starting point (1/2)
2. Motivation/Starting point (2/2)

1. Execution of ad hoc processes is done with currently existing, different media, often e-mail
   - Ex post analysis of processes is often not possible
   - Knowledge from ad hoc processes and therefore the process knowledge of the involved persons can not be used

2. Practical experience from daily work of a groupware-based office environment
   - Office management, administrative processes
   - Learning processes
   - Small projects

3. Workflows are often only used for core processes of organizations
   - Design of workflows is nearly always done by specialists
Visualisation
## GroupProcess-Continuum

### 1. Ad hoc workflows
- **a)** Ad hoc WF
- **b)** Open Team Task within Ad hoc WF
- **c)** Ad hoc WF with sub-workflow/ or cluster

<table>
<thead>
<tr>
<th>e-mail, store-and-forward</th>
<th>combination of determined and open tasks within a single ad hoc workflow</th>
<th>Integration of a sub-workflow within an ad hoc workflow</th>
<th>Predefined workflow with one part being ad hoc planned and executed</th>
</tr>
</thead>
</table>

**Partially predefined**
- **-** urgent
- **-** short-lived
- **-** exceptional
- **-** confidential

**Examples**
- e.g. new type of request
- e.g. co-authoring of publication
- e.g. boss wants some job to be done but does not know the details

### 2. Semi-structured workflows
- **a)** Ad hoc sub-workflow within standard WF
- **b)** Open Team Task within Standard WF
- **c)** Ad hoc modification of standard WF

<table>
<thead>
<tr>
<th>combination of predetermined and open tasks within a single workflow</th>
<th>Predefined workflow with exception</th>
</tr>
</thead>
</table>

**Completely predetermined workflow**
- **-** highly recurrent
- **-** high-determined
- **-** well structured

**Examples**
- e.g. solving software problems
- e.g. co-editing of annual report
- e.g. consumer credit application with particular customer request

### 3. Standard predefined workflows

**Completely predetermined workflow**
- **-** highly recurrent
- **-** well structured

**Examples**
- e.g. new type of request
- e.g. co-authoring of publication
- e.g. boss wants some job to be done but does not know the details
- e.g. solving software problems
- e.g. co-editing of annual report
- e.g. consumer credit application with particular customer request

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**Tendency of processes to develop over time**

*flexible, changeable, unique*  
*Tendancy of processes to develop over time*  
*determined, structured, recurrent*
## GroupProcess-Continuum

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Ad hoc workflow</td>
<td>a) Open Team Task within Standard Workflow</td>
<td>Completly predefined workflow</td>
</tr>
<tr>
<td><img src="image1" alt="Diagram" /></td>
<td><img src="image2" alt="Diagram" /></td>
<td><img src="image3" alt="Diagram" /></td>
</tr>
<tr>
<td>b) Offene Team Task within ad hoc workflow</td>
<td>b) Ad hoc sub-workflow within standard workflow</td>
<td></td>
</tr>
<tr>
<td><img src="image4" alt="Diagram" /></td>
<td><img src="image5" alt="Diagram" /></td>
<td><img src="image6" alt="Diagram" /></td>
</tr>
<tr>
<td>c) Integration of a sub-workflow within an ad hoc workflow</td>
<td>c) Ad hoc modification of standard workflow</td>
<td></td>
</tr>
<tr>
<td><img src="image7" alt="Diagram" /></td>
<td><img src="image8" alt="Diagram" /></td>
<td><img src="image9" alt="Diagram" /></td>
</tr>
</tbody>
</table>

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**Degree of structuring of processes**

**Tendency of processes to develop over time**
3. Objectives of GroupProcess (1/2)

- Ad hoc workflow management system for Groupware-based office environments
- Transform implicit process knowledge into explicit process knowledge
- Transition from ad hoc workflows into structured/predefined workflows
- Integration of an ad hoc workflow component into a traditional workflow management system
For the use of synergetic effects from a process driven view, GroupProcess establishes the missing link between office management, workflow management and knowledge management.
Design-tools for ad hoc workflows

1. Tabular Editor

2. Graphical Process modeling tool

3. Combination of 1. and 2.

4. E-Mail-Tracking

- Follow the development of a Store-and-forward E-Mail-Process and store it for ex post analysis and further use
Das Problem ist ein Notes-Problem (Bei zu vielen Kategorien, funktioniert die DBColumn-Function nicht).
# Tabular Editor

<table>
<thead>
<tr>
<th>Linear</th>
<th>Aufgabe: Problem Auswahl Bericht-Kategorien analysieren</th>
<th>Bearbeiter: Angelika Bursig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Details: Beim Auswählen von Kategorien für Berichte erscheint eine leere Liste</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Split</th>
<th>Aufgabe: Problem analysieren (Administrativer Aspekt)</th>
<th>Bearbeiter: Ulrich Förster</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Details: Analyse ACL und weitere Einstellungen</td>
<td>Bearbeiter: Carsten Huth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Details: Espresso-Datenbank</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Linear</th>
<th>Aufgabe: Lösungsbestandteile zusammenführen</th>
<th>Bearbeiter: Carsten Huth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Details: Keine Administrativen Probleme festgestellt / Aussage J. Winkelmann: Notes-Problem, daher z. Zt. keine Lösung möglich</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Merge</th>
<th>Aufgabe: Lösung mitteilen</th>
<th>Bearbeiter: Carsten Huth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Details: Notes-Problem, daher z. Zt. keine Lösung möglich</td>
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</table>
5. Conceptual approaches / challenges

- Participatory, distributed Design
- Simultaneous execution
  - Build Time = Run Time
- Transition from concrete to abstract process modeling
Phases of workflow management

**Build Time**
- Process Design & Definition

**Run Time**
- Process Instantiation & Control

**Build Time = Run Time**

- *Process Definition and Process Instance as one unity*

**Process Definition**

**Workflow Enactment Service**

**Applications & IT Tools**

**Workflow Control Data**

**Workflow Relevant Data**

**Application Data**

6. Architecture GroupProcess
### 6. Architecture: Documents/Message-Objects

<table>
<thead>
<tr>
<th>Frontend Fields (visible)</th>
<th>Backend Fields (not visible)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Process Model Diagram" /></td>
<td><img src="image" alt="Backend Fields" /></td>
</tr>
</tbody>
</table>

- **Display of process model** as overview with current state and the option to change the model while the process is running.

- **Content** of the workflow case. In most cases in an office environment rich text, but also fields for structured information are possible.

- Storage of process model and other **routing information** within the backend fields of document.
6. Technological Aspects

- **User Interface**
  - Modeling of process elements and persons or organisational entities on one screen
  - View of the process model while the process is running

- **Technological aspects of tools for ad hoc workflow management**
  - No separate installation of modeling tools
  - Usage of the modeling tools within a web-browser and Lotus Notes client
  - Sending of message objects with an integrated modeling tool
    - Java as technology for the graphical user interface
Questions, Remarks & Discussion