The Good, The Bad, and The Ugly of User Involvement in Software Development

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User Involvement / User Participation Leads to System Success


Fig. 1. SLR execution process.
Fig. 6. Relationship of user involvement and system success.

Fig. 7. Perspectives of user involvement.
Table 6
Benefits of user involvement.

<table>
<thead>
<tr>
<th>Benefits from psychological perspective</th>
<th>Description</th>
<th>Extracted from following studies</th>
<th>Freq (N = 87)</th>
</tr>
</thead>
<tbody>
<tr>
<td>User system satisfaction</td>
<td>Users will favor a system more if they are involved in its development and feel satisfied with it</td>
<td>S3, S13, S16, S20, S21, S27, S33, S34, S35, S37, S38, S45, S46, S52, S59, S63, S65, S67, S68, S71, S83, S84</td>
<td>23</td>
</tr>
<tr>
<td>User system acceptance</td>
<td>Users approve that the system is developed according to their workplace needs and requirements</td>
<td>S4, S11, S13, S38, S40, S43, S46, S64, S87</td>
<td>9</td>
</tr>
<tr>
<td>Facilitating change</td>
<td>Involved users will not resist using a new system in their work environment</td>
<td>S5, S12, S69, S71, S72</td>
<td>6</td>
</tr>
<tr>
<td>Better user’s attitude towards system</td>
<td>Involved users will show positive attitude when using the system</td>
<td>S5, S12, S69, S71, S72</td>
<td>5</td>
</tr>
<tr>
<td>Increasing perceived relevance to the system by users</td>
<td>Involved users considered themselves more informed about the system and think that the system is relevant</td>
<td>S12</td>
<td>1</td>
</tr>
<tr>
<td>Increasing user motivation</td>
<td>Involved users will be more motivated to use the system</td>
<td>S16</td>
<td>1</td>
</tr>
<tr>
<td>Increasing customer loyalty</td>
<td>Involved users will have higher degree of trust in the development team</td>
<td>S21</td>
<td>1</td>
</tr>
<tr>
<td>Assist in maintaining long term relationship with users</td>
<td>Involved users will have more interaction with the development team. This helps maintain long term relationships between users/customers and development team</td>
<td>S21</td>
<td>1</td>
</tr>
</tbody>
</table>
User Involvement / User Participation leads to System Success

Benefits of user involvement or participation from (as given in Table VI)
- Psychological perspective
- Managerial perspective
- Methodological perspective
- Cultural perspective
- Political perspective

Additional Factors influencing UI-SS relationship

- Degree and Level of user involvement e.g., consultative, informative participative (see RQ2)
- Techniques of Methods of user involvement e.g., JAD, PD, ETHICS (see RQ4)
- Stages of SDLC for user involvement e.g., requirements analysis, design, implementation (see RQ8)
- Types of system being developed e.g., DSS, ESS, ERP, MIS (see 8.1.5)
- Other factors e.g., task complexity, uncertainty, user attitudes, conflicts, communication (see Table VII, VIII)

From cultural and political perspective

From cultural perspective

From methodological perspective

From managerial and psychological perspective

Fig. 9. Factors found in SLR for UI-SS relationship.
Fig. 2  Research design of the longitudinal study
Case Study 1

Fig. 3 Bottom up approach for data analysis


Fig. 5 Timeline of data collection at various stages of CRM and portal

Timeline for 4 instances of data collection

- March 2012
- July 2012
- Oct 2013
- Sep 2015
### Case Study 1

#### Table 2: Summary of user satisfaction observations from case study

<table>
<thead>
<tr>
<th>Stages of SDP</th>
<th>CRM Project</th>
<th>Partial Project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Implementation</td>
<td>Implementation</td>
</tr>
<tr>
<td></td>
<td>Pre-implementation</td>
<td>Implement ation</td>
</tr>
<tr>
<td>Level of Involvement</td>
<td>Partially Satisfied</td>
<td>Partially Satisfied</td>
</tr>
<tr>
<td>Effectiveness of Involvement</td>
<td>Not Satisfied</td>
<td>Partially Satisfied</td>
</tr>
<tr>
<td>User representation</td>
<td>Fully Satisfied</td>
<td>Fully Satisfied</td>
</tr>
<tr>
<td>Top management support</td>
<td>Partially Satisfied</td>
<td>Partially Satisfied</td>
</tr>
<tr>
<td>User-Developer Communication</td>
<td>Not Satisfied</td>
<td>Partially Satisfied</td>
</tr>
<tr>
<td>System usage</td>
<td>Not Applicable</td>
<td>Fully Satisfied</td>
</tr>
<tr>
<td>System quality</td>
<td>Not Applicable</td>
<td>Fully Satisfied</td>
</tr>
</tbody>
</table>

#### Category of satisfaction

<table>
<thead>
<tr>
<th>PROCESS of User Involvement / Participation</th>
<th>PRODUCT Expectation</th>
<th>PRODUCT Realization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miscommunication</td>
<td>- Negotiation</td>
<td></td>
</tr>
<tr>
<td>Conflicts</td>
<td>- Ineffective training</td>
<td></td>
</tr>
<tr>
<td>- Time delay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Cost overrun</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Core Benefits of UI

- Better understanding of user requirements
- Developing realistic expectations
- Facilitating knowledge-sharing
- Helping in conflict resolution

- Better understanding of user requirements
- Facilitating change
- Improving users' skills (Training)

- Assist in maintaining long-term relationship with users
- Better communication
- Facilitating change
- Improved management practices
- Improving quality of resultant application
- Improving users' skills
- Positive perceptions of team members
- User system acceptance
- User system satisfaction

- Assist in maintaining long-term relationship with users
- Better communication
- Democracy in workplace
- Facilitating change
- Facilitating knowledge sharing
- Improved management practices
- User system acceptance
- User system satisfaction
Fig. 6  Relationship between user satisfaction with involvement and system
Case Study 1

• Based on our analysis we posit that there is a mutually constituted relationship between user satisfaction with their involvement process and their satisfaction with the delivered system.

• Our results suggest that two important factors played crucial roles in increasing the benefits of user involvement in achieving user satisfaction:
  • Dynamic management strategies introduced in the Portal project, and
  • Effectiveness of the user representation (SME) throughout the project
Case Study 2
Case Study 2

Figure 1: Organizational structure showing key actors
Case Study 1

Fig. 6 Relationship between user satisfaction with involvement and system
User Dissatisfaction with their involvement (Process)

Inter-Organisation Politics

Ineffective role of PM and SME

User – Developer communication
User Involvement in Software Development

• The Good
  • Democratic process and neo-humanist systems aiming to improve the work process
  • Successful implementation and usage of system
  • User satisfaction

• The Bad
  • Challenging to involve users (time, resources, strategy)

• The Ugly
  • Tussle of power and inter-organisational politics between users and development team
Effective Management of User Involvement

Why to involve?
- Objectives and benefits from psychological, managerial, methodological, cultural or political perspectives

When to involve?
- Stages of Software Development Life Cycle

Who to involve?
- Effective user representation

How to involve?
- Neo-humanism (PD) or functionalism (JAD)

How much to involve?
- The degree and level of involvement i.e. Informative, Consultative, Participative
References


Q&A

Thank you for listening!