

The Why and Why not of User Participation in IOS Development

This paper argues that user participation can enhance the development of Interorganisational systems (IOS). Under certain circumstances participation may be particularly desirable or may be facilitated; other circumstances make participation seemingly less important or inhibit participation. Such contingencies for participation during IOS development are identified and described.

When interorganisational systems (IOS) are developed, the intention is that these systems are adopted by users outside the initiating organisation. Such users

* by Dr. Angèle L. M. Cavaye
Delft University of Technology

may be private individuals (for instance, users of Internet or of automated teller machines) or may be organisations (for instance, users of order entry systems or corporate cash management systems). Implementation of IOS and system uptake by intended users is not necessarily easy or successful. There are a number of measures and practices which organisations can employ to enhance implementation. Some of these (like large-scale marketing of the system) are used *after* a system has been developed, at a time when the IOS is ready to be offered to potential users. It is also possible to take a *proactive* stance towards facilitating implementation and encouraging adoption of the IOS by users; by seeking participation of intended users during the development process, the opportunity is created to consider potential implementation problems *before* the IOS has been built.

What is 'User Participation in IOS Development' ?

Participation of intended users during development of a system refers to the practice of involving users in activities during the development process. Such participation should not just take place during testing of the system, but participation should allow users to help shape the system by collaborating during the problem definition phase and the specification phase of development. Participation is aimed at building a system which is acceptable to intended users and this in turn should facilitate implementation and encourage adoption and use of the system by the intended user group.

Participation in the IOS context involves gathering together representatives of various interest groups from outside the organisation before starting actual development and seeking active involvement of those users during the development process. In this way, the IOS is developed with input and (hopefully) with the consensus of intended users which, if carried out correctly, should ensure that

the concept and the final design of the IOS take account of various interests. When the IOS addresses intended users' needs and interests, the system is more likely to be accepted and used by the intended users.

While the argument in favour of participation is compelling, there are also arguments against participation. One of those is that IOS are so new to users that the users can not possibly know what they need and cannot express what they would like from the system. Another argument against participation is that different organisations pursue their own self-interest and that it may be difficult to achieve full co-operation from various parties. However, by encouraging participation, an organisation can be seen to want to co-operate with other parties. Also, the participation effort itself can make interests of various parties explicit and can allow latent needs to surface. Once the wish to co-operate is apparent and the various interests are clearly expressed, participation can be used to try and achieve consensus on the concept of the system to be developed.

Contingencies that Make Participation more or less Pertinent

There are several conditions where there is a greater or lesser apparent need for participation of intended users in the IOS development effort (see Table 1).

| Contingency factors | Lesser importance | High importance |
|-----------------------------------|-------------------|--------------------|
| intended use of system | mandatory | voluntary |
| nature of process to be automated | standardised | loosely structured |
| number of interest groups | low | great |

Table 1: Contingencies impacting on potential importance of participation in IOS development

□ *Intended use of the system*

Systems which are to be imposed on users and use of which is compulsory, do not necessarily require participation of users during development to enhance user adoption of the system: whatever the outcome of the system development effort, users will be forced to use the system. On the other hand, systems which rely on voluntary adoption and use can benefit greatly from participation. When

adoption of the IOS is voluntary, it is particularly important to ensure that the needs/wishes of user organisations are taken into account during development.

□ *Nature of process to be automated*

When the processes to be addressed by the IOS are highly regulated and standardised, then IOS development is relatively structured and straightforward. In that case IOS development is concerned with the automation of existing, well-defined procedures which does not necessarily require involvement of intended users to define the system concept or to define specific requirements. Alternatively, systems can also be aimed at automating less structured processes and systems can significantly change existing processes. In these situations participation of intended users can aid the development process and facilitate implementation of the proposed system.

□ *Number of interest groups*

When developing a system for a specific interest group it is possible that the system initiator can oversee and anticipate the needs of that group without requiring any specific input from that group during development of the IOS. In contrast, when there are a large number of potential interest groups it is more difficult for the system initiator to intuitively understand the needs and requirements of all different groups. This problem may be addressed by consultation with representatives of all potential interest groups early on in the development process and by seeking participation of representatives during development of the IOS.

It is clear that there are circumstances where there may be less need for participation to enable development of an IOS than in other circumstances. Although in

those cases participation may not necessarily be *required*, participation is still *desirable*. Mandatory systems, systems with a high degree of structuredness, and systems with a low number of potential interest groups can still benefit from participation. After all, participation enhances user understanding, acceptance and commitment to the system; as such participation can smooth the implementation stage of development. In addition, seek-

| Contingency factors | Inhibitor | Facilitator |
|---------------------------------------|------------------------------|--|
| power distribution among participants | initiator is powerful player | no overt power difference between initiator and potential participants |
| nature of market | open | closed |
| number of potential interest groups | many | few |
| number of competing systems | none/few | many |
| world view of initiator | functionalist | neo-humanist |

Table 2: IOS contingencies inhibiting and facilitating participation

ing participation, especially when not strictly necessary, demonstrates the initiator's wish for a collaborative and positive relationship with partners and this could enhance the overall trading relationship.

Contingencies that Inhibit or Facilitate Participation

There are a number of factors that are known to inhibit participation in the development of any system, whether internal or external. Those factors include lack of time (participation is known to increase the amount of time required for development); and lack of funds (participation increases the cost of development by lengthening development time and increasing requirements). These factors will not be discussed here; instead we focus on the factors which are specific to the IOS context (see Table 2).

□ Power distribution among participants
In many trading situations there are dominant players; this can happen in vertical relationships and in horizontal relationships. The fact that there is a dominant player need not affect participation, but it often does. The dominant player is in a position of power and may use influence to ensure that an IOS development serves its own interests. When the dominant player is the system initiator, participation from other players may not even be sought or, if it is, participation can become a highly political process with every party seeking to get the best out of the situation.

□ Nature of the market

The intended user market may be closed and may have a known set of users or user groups; alternatively, the market may be open and have an undefined number or set of users. In a closed group different (groups of) users are known and clearly defined; in an open group the different users may not be clearly identifiable. When different groups of users cannot be clearly identified, it is difficult for the IOS initiator to invite participation from those

users. In contrast, when different users or groups of users are easily distinguished, then seeking participation from users is facilitated.

□ Number of potential interest groups

When the number of potential interest groups increases, a participation effort becomes more difficult to co-ordinate and consensus is less likely to be achieved in a short period of time. Foreseeing difficult discussions and time delays, the initiator of such an IOS may prefer to develop a system without participation hoping to create a norm or standard which other participants then accept and use. Alternatively, participation during development of an IOS with a focused user group would create less difficulty for the initiator which makes the seeking of participation from intended users more likely.

□ Number of competing systems

In industry sectors there may at any one time be one, few or many competing, similar IOS. When there is no competitor or when there are only few competing systems, an IOS initiator may not feel forced to seek participation of intended users. On the other hand, when many IOS flood the industry, participation of users in (further) development of the IOS is encouraged. Participation then is likely on two counts: the initiator will need to be sure that the new system is competitive compared to others and that it accurately meets market needs. Secondly, the initiator may seek rationalisation among competing IOS and may invite participation from sponsors of other IOS in order to discuss possibilities for a common, shared IOS.

□ World view of initiator

Many system development methodologies were and are based on functionalist assumptions aiming at efficiency and effectiveness. A functionalist view of systems considers user participation as a means to an end: participation of intended users is only sought if this is clearly necessary to enhance the system. In contrast, in the neohumanist world view, participation is accorded a central role in

the development effort. The people and the potential users of the system are then considered the most important component in the information system. When the initiator embraces a neohumanist world view, participation of intended users becomes the default and the norm.

One of the factors in Table 1 (factors indicating greater or lesser need for participation) also appears in Table 2 (factors inhibiting or facilitating participation): IOS contexts with many different interest groups could benefit from including users during development and yet the sheer number and variety of different user groups works as an inhibitor on participation. It seems ironic that one of the situations where participation seems particularly necessary and important is also a situation which tends to have an inhibiting effect on participation!

Concluding Comments

Participation in the IOS context is perhaps more complicated than participation in internal system development - after all, participants are separate and independent from the initiator. And yet, participation in IOS development can be very rewarding since it enhances co-operation with trading partners and also potentially enhances implementation success. Sadly, in practice there are many situations where participation may not seem necessary or may be inhibited. Practitioners should carefully consider the benefits of participation of intended users during development of an IOS and must be aware of the participation contingencies. Only then is it possible to make a conscious decision concerning the relevance of participation during development of a particular IOS. ■

References

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* Dr. Angèle Cavaye (acavaye@sep.tudelft.nl) is Assistant Professor at the Department of Systems Engineering, Delft University of Technology, The Netherlands.