EIGHT CHALLENGES FOR DEVELOPERS

By Jonathan Grudin

Presented by María Sánchez de Arriba
INTRODUCTION

- Computer support has focused on organizations and individuals. Groups are different. Repeated, expensive groupware failures result from not meeting the challenges in design and evaluation that arise from these differences.

- This article talk about the origins of groupware, describes eight specific problem areas, and finally examines groupware successes in search of better approaches to supporting work in group settings.

- Successes exist, but the progress is slow and can lead in unanticipated directions.
-We can see each software development area emerged independently and produced the research and development literature is identified on the left.

-Systems designed to support organizations achieved prominence first, because the expense of early computers required that they address major organizational goals.

-“Organizational goals” are major goals normally defined by upper management.

-At the beginning of 1980 the research and development activities based on human factors (HF), approaches to design and evaluation before appear conferences and journals under such banners as Computer and Human Interaction (CHI).
- In the mid-1980s the terms groupware and Computer Supported Cooperative Work (CSCW) were coined and conference series and literature appeared.

- On the right of the drawing are the principal software development contexts involved in each area. Most systems addressing organizational goals are developed in-house or contracted out.

- To understand the problems encountered by groupware applications, we have to know that most interest in groupware development is found among the developers and users of commercial off-the-shelf products who previously focused exclusively on single-user applications.
NEW PROBLEMS

In addition to technical challenges, groupware has this problem for product developers: Because individuals interact with a groupware application, it has all the interface design challenges of single-user applications, supplemented by a host of new challenges arising from its direct involvement in group processes.

Here we will see the eight major problems that stem from the social dynamics of groups, from development experiences, descriptions of short-lived products and research prototypes, and experimental and modeling studies in the literature.
DISPARITY IN WORK AND BENEFIT

- A groupware application never provides the same benefit to every group member.
- Cost and benefits depend on preferences, prior experience, roles, and assignments.
- Most groupware requires some people to do additional work to enter or process information required or produced by the application.
- Addressing the problem:
  - Demonstrating an application’s collective and indirect benefits can help
  - Reducing the work required of nonbeneficiaries.
CRITICAL MASS AND PRISONER’S DILEMMA PROBLEMS

- Most groupware is only useful if a high percentage of group members use it.
- Achieving a critical mass of users is essential for communication systems.
- Addressing the problem:
  - Designers can reduce the work required of all users, build in incentives for use, and suggest a process of use that provides or emphasizes individual and collective benefits.
SOCIAL, POLITICAL AND MOTIVATIONAL FACTORS

- Groupware can lead to activity that violates social taboos, threatens existing political structures, or otherwise demotivates users crucial to its success.

Addressing the problem:
- Recognizing the magnitude of the problem.
- Avoid the common assumption of a "rational" work environment.
- Developers need sophisticated understandings of prospective users' workplaces.
- Working with representative users.
EXCEPTION HANDLING IN WORKGROUPS

- Work processes can be described in two ways: the way things are supposed to work and the way they do work.
- The software designed to support standard procedures can be fragile.
- A wide range of error handling, exception handling, and improvisation are characteristic of human activity.
- Addressing the problem:
  - Using tailorable systems is a good step to providing flexibility, is also a challenge, because people are not conscious of detailed organizational functioning and how changes will affect other people.
DESIGNING FOR INFREQUENTLY USED FEATURES

- Many organizations are structured and responsibilities are divided in order to minimize the overall communication requirements and social interdependencies.

- Groupware features will be used less frequently than many features supporting individual activity.

- Addressing the problem:
  - If possible, add groupware features to an already successful application
THE DIFFICULTY OF EVALUATION

- Task analysis, design, and evaluation are much more difficult for multiuser applications than for single-user applications.
- Addressing the problem:
  - Development managers must enlist the appropriate skills, provide the resources, and disseminate the results.
THE BREAKDOWN OF INTUITIVE DECISION MAKING

- The problem is not always in the detailed design, but in decision-making in development environments.
- Addressing the problem:
  - If development management recognizes the risks, complexities, and fallibility of intuition
MANAGING ACCEPTANCE: A NEW CHALLENGE

- Much research in organizational IS has addressed system acceptance.
- Product developers are usually shielded from such concerns by marketing, customer support, documentation developers, training developers, and others who stand between them and the users.
- Customers also accept some responsibility for their choice and may have consultants, internal developers, and other groups to tailor, supplement or oversee the introduction of a product.
- Addressing the problem:
  - Adding groupware features to existing applications.
FINALLY

- Product such as email, databases, and code management systems are used successfully in group contexts.

- These object management applications, focus on organizing and handling information without incorporating notions of role, process, and social interaction. Because of this some don’t consider them groupware.
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