

UX IN B2B Systems: Specifics of Designing Complex Interfaces for Professional Users

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Abstract. *The article focuses on the specifics of UX design in B2B systems, particularly the challenges of designing complex interfaces for professional users. The purpose of the article is to explore the unique characteristics of UX design within B2B systems, with an emphasis on professional usage contexts. The study employed general scientific methods of cognition, such as analysis, synthesis, comparison, systematization, generalization, modeling, and observation. The findings demonstrate that UX design in B2B environments plays a critical role in enabling effective professional interaction. It was found that such UX is tailored to complex, multi-level usage scenarios that reflect the specificity of user roles and the demands of high-load environments. The research showed that the key requirements for B2B system interfaces include aligning information architecture with users' mental models; integrating functionality with navigation to support continuity of action; and customizing the interface to suit specific user roles. Personalization was shown to significantly reduce cognitive load and enhance overall productivity. Scenario-based modeling enables the creation of logical, consistent user flows that preserve system states and ensure efficient feedback-features that are particularly important for repetitive actions in formalized B2B processes. The study confirmed that UX design directly contributes to reducing task completion time, lowering error rates, and increasing overall system reliability. Usability testing methods that consider the professional use context help identify critical points of frustration and overload. The application of such methods as observation, user action logging, and post-test analysis allows the interface to be adapted to real tasks and workflows. The effectiveness of these techniques is substantiated for the B2B segment, where precision, speed, and interaction reliability are key UX quality indicators. The practical value of the study lies in developing a systematic approach to UX design in B2B systems, which can be applied when creating or improving digital products for professional users.*

Keywords: *UX design, B2B systems, customization, user flow, usability.*

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Introduction

In today's digital environment, where business processes are increasingly moving to the online space, the effectiveness of user interaction with information systems is becoming a critical factor in the competitiveness of enterprises. This is especially true for the B2B segment, where users are professional operators working in highly loaded environments, performing complex, multi-stage tasks with increased requirements for accuracy, speed, and reliability. Against this backdrop, there is a growing need to study the specifics of UX design for B2B platforms as a strategic tool to support productivity and reduce operational risks in professional use.

Despite the growing interest in user-centered design in the B2C sphere, UX in the B2B context is still an insufficiently studied area that requires a deeper theoretical and applied analysis. The high level of interaction complexity, the presence of heterogeneous user roles, and the need to customize interfaces for specific business processes create specific challenges that are not covered by standard approaches to UX design. The relevance of the study is driven by the need to form a systematic understanding of the design features of B2B interfaces that can not only provide functionality but also support the strategic goals of the organization by improving the user experience in professional digital environments.

Analysis of the latest research and publications. The issue of the specifics of designing complex interfaces for professional users in B2B systems is not sufficiently covered in the national scientific literature, so when researching this topic, the main focus was on foreign publications that offer a deep and systematic understanding of approaches to UX design in complex digital products.

Significant contributions to the development of the topic have been made by such authors as A. Cooper, R. Ryman, D. Cronin, and K. Noessel [1], who in their work outlined the fundamental principles of interaction design, focusing on the specific needs of professional users in B2B environments. J. J. Garrett [2] proposes a user experience model that allows structuring the stages of UX design, in particular in the field of corporate products. B. Henington and B. Martin [3] presented a wide range of methods for researching user needs, among which contextual research methods are especially relevant for the B2B environment.

P. Laubheimer [4] outlines the key differences between UX design for B2B and B2C audiences, emphasizing the complexity of decision-making in B2B interfaces. T. Long [5] analyzes in detail the construction of user scenarios and transition logic in complex systems. The work of D. Norman [6] helps to understand the principles of designing familiar interaction elements that play a key role in a professional environment. J. Nielsen [7, 8], in turn, emphasizes the feasibility of testing even with limited resources, which is critical for B2B projects with a narrow target segment.

In addition, expert literature was used, including publications in modern online publications such as nngroup.com, uxplanet.org, seattlenewmedia.com, uxcam.com, which cover relevant aspects of UX design in B2B, including personalization of user experience [9], the impact of UX on business [11], and web form design [12], which are key to B2B service interfaces.

Despite a sufficient amount of foreign literature on this topic, there is a lack of systematized material in the domestic scientific discourse. Therefore, using various methods of scientific cognition, the information was analyzed, aggregated, systematized and presented in the light of the research topic as new, useful and applied material for the domestic scientific community.

The purpose of the article is to study the specifics of UX design in B2B systems with a focus on the professional context of use.

To achieve this goal, the study will accomplish the following **tasks**: to investigate the features of UX design for B2B platforms; to analyze the design approaches for complex user

experiences; to explore the differences between B2B and B2C environments; to show the impact of UX design on the efficiency of business processes; to characterize the features of testing.

Results

In the context of digital business solutions, UX (User Experience) in B2B (Business-to-Business) systems plays a crucial role in ensuring effective interaction of professional users with complex interfaces. The interface of applications, websites, and apps in B2B systems is characterized by increased complexity due to the need to serve professional users who work with large amounts of data, specialized functional modules, and complex workflows. In this context, special attention should be paid to usability, which should be adapted to the specifics of the professional environment, where efficiency, accuracy, and continuity of tasks take precedence over aesthetic or emotional aspects of interaction.

According to the approaches of J. Nielsen, author of the book on usability engineering [7], the following components are important in B2B interfaces

- systematic use of usability heuristics;
- focus on supporting user errors;
- ensuring effective navigation;
- minimizing cognitive load.

Particular attention should be paid to supporting expert interaction, which implies system flexibility, the availability of shortcuts for experienced users, and full transparency of system logic for analytical control by the user. It is also important to match the mental models of professionals with the architecture of information in the interface.

In the context of data entry, as L. Wroblewski notes, it is critical to design forms taking into account the user's tasks and the context of the application [12]. For B2B interfaces, this means developing forms that:

- support the repeatability of actions;
- high speed of data entry and editing;
- real-time validation;
- the ability to integrate with other parts of the information system.

Forms design should be optimized for the logic of user tasks, not for the database structure or internal architecture of the system, which is especially important for minimizing errors in a high-risk environment.

Unlike B2C environments, B2B interfaces differ significantly due to differences in user motivation, behavior, and goals [3]. In particular, B2C UX focuses on emotional appeal, intuitiveness, and simplicity, as end users often make impulsive decisions and expect instant gratification [4]. The application of design methods in B2B projects requires more analytical thinking, immersion in the context of business processes, and close cooperation with subject matter experts. Let's make a comparative analysis of the approaches in Table 1.

Table 1 - Differences between UX in B2B and B2C environments

Parameter	B2B UX	B2C UX
Target audience	Professional users, experts	Mass market, end users
User motivation	Rational, productivity-oriented	Emotional, focused on pleasure
Duration of interaction	Long-term, with frequent reuse	Short-term or episodic

Interface complexity	High, support for complex functions	Low, maximum simplicity
Decision-making process	Collective, formalized	Individual, impulsive
UX research methods	Contextual interviews, process mapping	User testing, A/B testing
Design priorities	Functionality, scalability, accuracy	Aesthetics, speed, lightness

Note: systematized based on [3,4].

Use cases in the B2B context often involve deep user flows and multi-level actions that reflect the complexity of tasks performed by professional users. Unlike simple transactional processes in B2C systems, B2B flows can include numerous steps, branching, checks, reversals, and context-dependent transitions. As emphasized by Cooper et al. [1], the author of the book on design features, effective design of such scenarios requires a customer-centered approach, where each scenario is developed taking into account the goals, motivations, and constraints of a specific user role in the system. It is important to ensure a logical sequence of steps, clarity of interface navigation, as well as state maintenance, saving of intermediate results, and feedback at each stage.

T. Longe emphasizes the importance of user flow analysis as a tool for identifying points of frustration, reduced efficiency, or excessive cognitive complexity [5]. In multi-level processes, such as order management, application processing, or product configuration, user flows should reflect the hierarchical structure of tasks, providing a clear transition between levels (for example, from generalized viewing to detailed editing). Effective UX in such cases should ensure transparency of the process, minimize memory usage, and provide the ability to return to previous stages without losing data.

Table 2 - Characteristics in deep user flows and multi-level actions

Component	Characteristics in deep user flows and multi-level actions
Scenario structure	Hierarchical, with nested stages, dependencies between actions
User orientation	Client-centered approach with a focus on professional roles and tasks
Typical processes	System configuration, approvals, document editing, multi-step formal procedures
Navigation features	Support for transitions between levels, breadcrumbs, contextual menus
Feedback	Instant, contextual, indicating the result of each action
Support for states	Automatic saving, drafts, the ability to return to previous steps
UX techniques	Flow modeling, scenario prototyping, task modeling, interaction point analysis

Note: systematized by the author based on [1,5].

According to the approaches proposed by J.J. Garrett [2], the design of complex user experiences, customization of interfaces, and ensuring the efficiency of workflows in B2B systems is based on a multi-level user experience structure that includes strategy, scope, structure, wireframe, and visual representation. The central idea is a user-centered approach, according to which the functionality and information architecture should meet clearly defined business goals and the needs of real users in a professional context.

When designing complex user flows, it is important to create logically connected, sequential actions that support the user's goals within a particular scenario. J. Garrett emphasizes the need to model the interaction structure based on an in-depth analysis of tasks, taking into account the conditions of use, user roles, and expectations. To achieve process efficiency, the integration of functional design with clear navigation is used to minimize frustration and reduce errors.

Customization of interfaces is seen as a mechanism for increasing the system's adaptability to specific user requirements. This includes the ability to customize panels, filters, data entry templates, and visualizations to meet the needs of a specific role. This approach improves productivity by reducing the time spent searching for functions, reducing information noise, and improving the interface's compliance with the user's actual business model.

Personalization and customization of the interface are key factors for effective interaction in complex B2B systems where users have heterogeneous roles, goals, and professional scenarios. According to J. Preece, Y. Rogers, and H. Sharp in their book *Interactive Design* [10], personalization allows to adapt the system's behavior to the individual needs of the user based on his previous actions, preferences, or the context of the task. This approach reduces cognitive load, increases task efficiency, and contributes to the development of a productive interface that "learns" with the user. In B2B environments, where complex functionality is often used, personalization maintains the relevance of interface elements by reducing information noise and optimizing workflows for specific roles (e.g., analyst, logistician, or financial manager).

Customization, in turn, provides the user with control over the appearance and structure of the interface, allowing to customize the system components in accordance with the specifics of tasks or organizational standards. As F. Olohijere emphasizes, the ability to customize interaction elements - from toolbars to data visualization filters - not only increases engagement but also promotes a sense of ownership of the system, which positively affects the level of trust and the duration of user interaction [9]. In a B2B environment, this is critically important, as the interface is not just a means of interaction, but a tool for professional activity, where individual interface optimization can directly affect the productivity and quality of decisions made.

High-quality UX design has a direct impact on the efficiency of business processes in a B2B environment, in particular by reducing task completion time, reducing the number of errors, and increasing overall user productivity. According to the principles outlined by L. Nguyen [6], an ergonomically designed interface minimizes cognitive load, avoids erroneous actions through clear signals, feedback, and affords that support intuitive understanding of the functionality. In a B2B context, where tasks are often repetitive, complex, and accuracy-critical, this is crucial for optimizing workflows. The main aspects of UX impact on business processes are as follows

- Reduced task completion time: interfaces that match users' mental models allow them to find functions faster and perform operations without unnecessary steps;
- Reducing the number of errors: a well-designed UX takes into account typical user errors and prevents them through design (e.g., confirmation of actions, blocking unwanted options);

- Increased user satisfaction: user-friendly interface reduces frustration, promotes greater staff engagement, and speeds up the onboarding process for new employees;
- Cost optimization: Reducing the need for support and technical assistance due to the intuitive interface reduces operating costs;
- Support for business continuity: UX focused on resilience and flexibility ensures the reliability of key functions even under stressful conditions;
- Analyzes usability testing methods for the B2B segment and their impact on reducing task completion time and reducing the level of errors.

Testing plays a critical role in identifying barriers to B2B usability. As J. Nielsen [8] emphasizes, even testing with a small sample of users (approximately five people) can identify up to 85% of the main usability problems. In the B2B context, this is extremely effective, as users are usually specialists with clearly defined roles, which makes it possible to quickly identify typical scenarios of erroneous interaction or overloading with cognitive tasks.

B2B usability testing methods take into account the complex structure of tasks and long user flows, so test sessions should be based on real professional scenarios. Effective approaches include moderator observations, the "think aloud" method, and post-test interviews with error prioritization analysis. The results of such research directly affect the optimization of interfaces: unnecessary steps are reduced, navigation logic is improved, and preventive feedback is introduced to avoid errors. The application of such approaches in B2B helps to reduce the time of typical operations, increase the accuracy of data entry, and ensure that the interface meets the high requirements of professional reliability.

Conclusions

Thus, UX design in B2B systems is critical to ensuring effective professional interaction, as it focuses on complex use cases, multi-level actions, and specific user roles. In B2B systems, UX design is determined by the specifics of professional use of interfaces, which implies high user flow complexity, flexible support for specialized scenarios, and maximum workflow efficiency. The key features are the correspondence of the information architecture to the mental models of users, the integration of functionality with navigation to support continuous operations, and deep customization of interfaces to reflect role-specific tasks. Customization and personalization allow to adapt the interface to the individual needs of the user, which reduces cognitive load and increases productivity. Scenario modeling of deep user flows provides a logical sequence of actions, state saving, and effective feedback, which is critical in the context of formalized, repetitive procedures typical for B2B users.

The effectiveness of UX in a B2B environment directly correlates with reduced task completion time, fewer errors, and increased reliability of operations. Usability testing, focused on professional use cases, helps to identify typical points of frustration and cognitive overload, which makes it possible to optimize the interface in a timely manner. Testing methods, such as observation, logging of user actions, and post-test analysis, are highly effective in the B2B segment due to their focus on real tasks and roles.

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