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Aligning IT and Business Strategy

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Process-UI alignment

new value from a new level of alignment

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Take aways

- ▶ *Contrary to traditional belief, the UI of a business application isn't simply a user or usability issue, but a serious business process issue.*
- ▶ *The business application's UI is business process and process-UI alignment is vital*
- ▶ *Rather than traditional approaches such as User-Centered Design (UCD), a radically different Process-Centered Design (PCD) approach is required to achieve process-UI alignment.*

Business-IT alignment has consistently topped the list of CIO concerns every year since 2003. Consultants and enterprises have proposed and used several approaches to try and bring alignment. However, they never thought that a humble component of a business application – the User Interface (UI) – could even have anything to do with alignment. What brings the UI to discussions on alignment? Contrary to traditional belief, a business application's UI isn't simply a user or usability issue, but a serious business process issue.

This article shows why a business application's UI is business process, highlights the need for process-UI alignment, and outlines a new approach to achieve alignment called Process-Centered Design (PCD). In this article, a business application is any software typically used as part of an enterprise-specific business process to achieve stated business objectives; examples are order management systems, insurance claims processing systems, and transport management systems.

Case Study:

What a Healthcare Enterprise Did

With member and provider enrollments increasing and service calls rising to about 7,000 every day, call handling became business-critical at a U.S. healthcare enterprise. With the help of a typical call center application, member services representatives

handled 10 calls an hour. During each call, representatives had to categorize the member's issue according to severity and assign it to an appropriate department for resolution. This involved some thinking as well as tedious technical steps in the application's UI. To support efficient handling of calls and issues, the enterprise had the application re-engineered and the re-engineering methodology included PCD.

The re-engineered application is now aligned with the call handling process. When a member calls, the representative sees the member's recent calls upfront, and can readily log a new issue or append to an existing issue. Also, the application categorizes the issue based on issue type. Process alignment and the resulting design techniques enable representatives to complete the task in three steps rather than the earlier 11 steps. Time saved is 304 minutes per representative per day. Using the freed-up time, each representative can now complete three additional calls per hour.

UI is Business Process

A research analyst firm tested 11 major enterprise applications and reported that “inordinate patience and expertise” were required to complete tasks with the applications. For enterprises using such applications, the word “patience” doesn’t simply translate to the human characteristic of tolerance, but rather to the unmet business objective of faster cycle time. So why do even major IT investments miss this critical need? The answer lies in the way software UIs are designed.

Traditionally, the UI has been viewed simply as a medium to access software functionality. The two major UI design approaches used today are System-Centered Design (SCD) and User-Centered Design (UCD). Software engineering’s methods, tools, and curriculum have traditionally supported an SCD approach. However, since the emphasis here is on the software’s internal structure, SCD resulted in interfaces that were complex to use. The Human-Computer Interaction (HCI) community introduced a significantly improved approach called UCD or usability engineering to design UI

that can address human factors issues and ensure user satisfaction. UCD continues to be the recommended approach, although SCD is still used in many software projects worldwide.

While UCD works well for consumer software and content-intensive Websites, it fails when it comes to applications involving a business process. Business apps are indeed fundamentally different. Typically, a business application:

- Enables a business process (or a part of it) and the tangible part of the application is the UI
- Is used by a large user base as part of an enterprise-specific business process to achieve specific business objectives
- Is a high-cost and long-term investment made by an enterprise.

Also, business performance objectives and application usage scenarios, and buying criteria of an enterprise are different from those of individual consumers. So, the UI of a business application should be viewed and represented as the business process it enables. For example, the UI of an insurance claims processing application should represent the workflow corresponding to the business scenarios of claims processing.

It’s easy to imagine why the “interaction medium” view is dangerous and inappropriate for business applications. It draws attention away from business-critical issues.

Process-UI Alignment is Key

If the UI of a business application is business process, then the primary activity should be to align the UI with the process – ensuring that the process itself is streamlined in the first place.

Process-UI alignment is the arrangement of the business process on the UI to help achieve business objectives such as improved process performance (for example, faster cycle time). The result of process-UI alignment is the UI architecture, which is basically a menu structure that represents the improved business workflow.

Alignment isn’t a simple one-to-one mapping of process to UI, but is driven by the set of criteria shown in Figure 1.

Figure 1: Criteria for Successful Process-UI Alignment

1	Is the UI viewed as business process rather than as interaction medium?	2	Does the UI architecture take a holistic workflow view rather than a task view?
3	Is the UI architecture driven by business scenarios?	4	Is the application free of functionality and features that are outside the business process?

Business and IT executives can’t afford to ignore the untapped business benefits that result from process-UI alignment. These benefits include streamlined application workflow and user productivity gains in the 100 to 200 percent range.

PCD: An Approach to Ensure Process-UI Alignment

Software development teams are usually required to focus on aspects such as scalability, interoperability, and usability. Rarely do they worry about how well the application is designed to meet business process performance needs let alone how well the UI aligns to the process. So, to achieve process-UI alignment, there's a need for a new systematic, holistic approach: PCD.

PCD aligns a business application's UI with a streamlined workflow to deliver optimized and measurable user productivity gains. PCD isn't about simply adding the process perspective to traditional approaches. Rather, it's about business process driving UI design from initial analysis to final design. Figure 2 shows a PCD model comprising four required phases:

Process analysis

In this phase, the workflow enabled by the application is analyzed holistically in the context of the overall business process where the application is used. A key perspective in analysis is the performance of the business process. The PCD team gathers process performance objectives and measures the as-is productivity metrics for key process tasks. Target user groups are studied using conventional HCI methods.

Process-UI alignment

While all PCD phases are mandatory, process-UI alignment is the most important. A study showed that aligning the UI to the business process largely contributes to the dramatic new levels of user productivity that typically result from PCD.

UI design

The UI architecture, an output from the process-UI alignment phase, helps choose the right design techniques and identifies the screens that must be designed. Screen design is mostly done with conventional HCI and graphic design methods. However, the PCD team keeps the overall process objectives in mind and also ensures that system performance isn't negatively impacted.

Business value analysis

This phase is the ultimate test of whether PCD was effectively done. Interestingly, it's also one of the best ways to demonstrate IT payoff itself. Business value analysis is the measurement of business benefits such as user productivity gains, cycle-time reduction, and financial savings resulting from PCD. The values computed at this stage are compared with the as-is figures obtained during the process analysis phase. Typically done after the enterprise has used the application for some time, business

value analysis also can occur at earlier stages if a robust estimation method is available.

Measurable New Value

A study showed that PCD's process-UI alignment primarily contributed to the 100 to 200 percent user productivity gains delivered by re-engineered applications. A U.S.-based logistics company, for example, conducted its own time and motion study on their re-engineered Customs Clearance application and reported "150 percent user productivity gains" and "significant financial savings."

Executive Agenda

Business and IT executives should demand the following from IT teams:

- Demonstration of process-UI alignment
- Demonstration of streamlining of the business process covered by the application
- User productivity gains of at least 100 percent (from application re-engineering projects).

They also should change their product acceptance procedure to include validation of applications for these business benefits. In pursuing these goals as a priority, enterprises of all sizes and in all industries can achieve the new value that process-UI alignment can deliver.

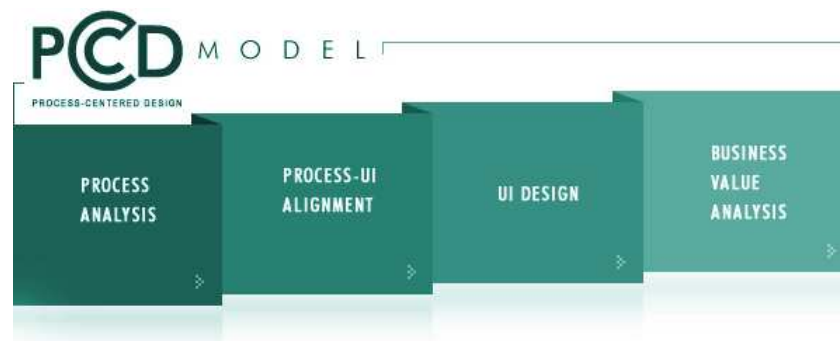


Figure 2: A PCD Model Comprising Four Required Phases

Is PCD the Only Approach That Can Deliver Process-UI Alignment?

A study was conducted to determine whether only PCD supports process-UI alignment. The study included 29 business applications developed using PCD and 23 applications developed using traditional approaches. The business process enabled by each application and the corresponding UI were analyzed for alignment based on criteria shown in Figure 1. A severe scaling pattern was used and only applications that met all four criteria qualified. The study showed strong evidence that PCD – unlike traditional approaches – aligns UI with business process.

About the author



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Pradeep Henry consults for the Center of Excellence in Process-Efficient Technology he founded at New Jersey headquartered Cognizant Technology Solutions, where he earlier held the position of director. Pradeep also is founding director of the non-profit *Institute for Process-Efficient Technology*. He is author of a book and several articles, and an innovator of methodologies to make IT deliver higher levels of process performance. You can reach Pradeep at pradeep@pradeephenry.com.