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1. Enterprise wide user interfaces: taking control of your end-to-end customer management processes

1.1. Summary

Contemplating an enterprise wide UI and application to mange your end-to-end customer management processes has traditionally been an extremely risky exercise with no certainty of outcome. Subsequently, Business has spent billions of dollars on various IT projects (Custom built and off-the-shelf) with the aim of delivering consistent and predictable sales and service standards to manage risk and increase compliance to maximise sales and profit.

Unfortunately, most of these projects take years longer than expected and cost many times more than originally planned. Most significantly, they do not, in general, speed up and simplify the customer management processes.

We also find that staff using such systems experience an increase in administrative workload, require extensive training to learn how to use the applications and take longer to process a customer request. They are not gaining the benefits of the promise of faster and easier systems. Therefore, time taken by administration reduces time for sales and servicing, directly affecting profitability.

The enterprise wide UI is intended to control the way user interfaces look across the business and, more importantly, exactly how particular functions or interactions link together into a meaningful workflow process every time.

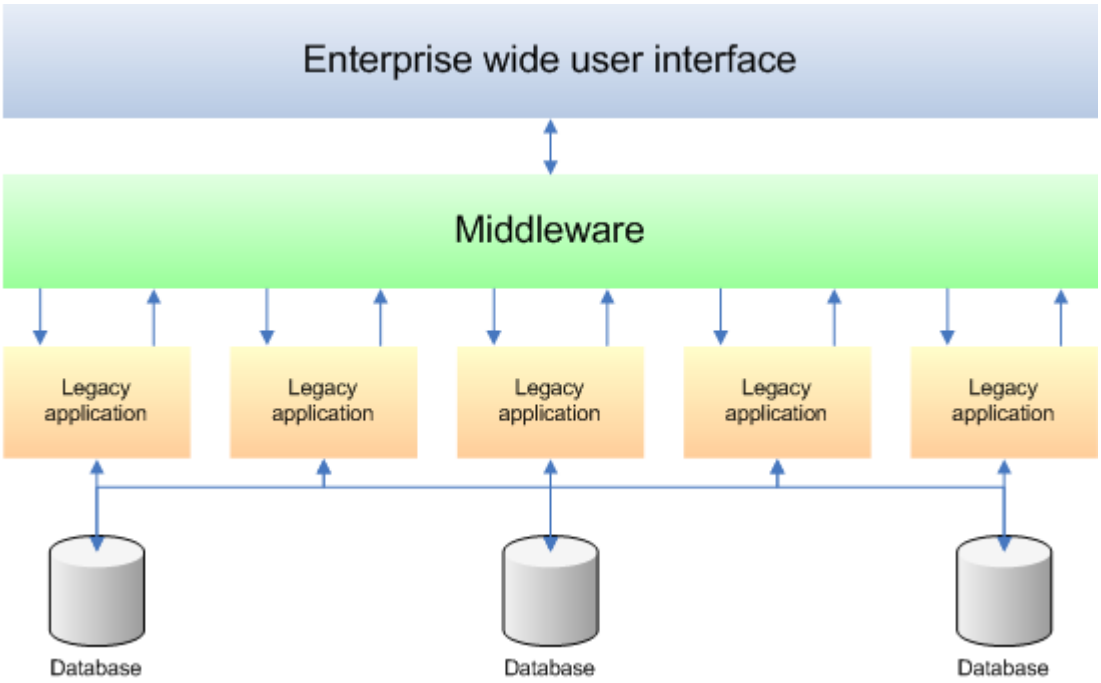
In our experience, the critical determinant of success is engaging experts in UI design because the UI is the only thing people will see or use. This is a skill rarely found in IT departments. Rather, their skills are in architecture and development, not UI. Just like you wouldn't get the plumber to architect your new kitchen, developers are not sufficiently skilled to deliver high performance user interface designs.

Before commencing the enterprise wide UI, we need to clearly understand people, activities and workflow – this is a skill in a psychologist's domain, not usually found IT. This information must then be translated into a design using a scientific, object oriented method (like XPDesign™) to translate this strategic knowledge to a design that works the first time.

This article discusses the nature of enterprise wide UIs, how to justify them and how to build them. Most importantly, it is about getting it right the first time.

1.2. What is an enterprise wide user interface?

The enterprise wide UI is a layer of abstraction that sits above existing applications. The following diagram shows the UI layer above a new middleware layer, which integrates the various legacy applications.



The enterprise wide UI delivers the following:

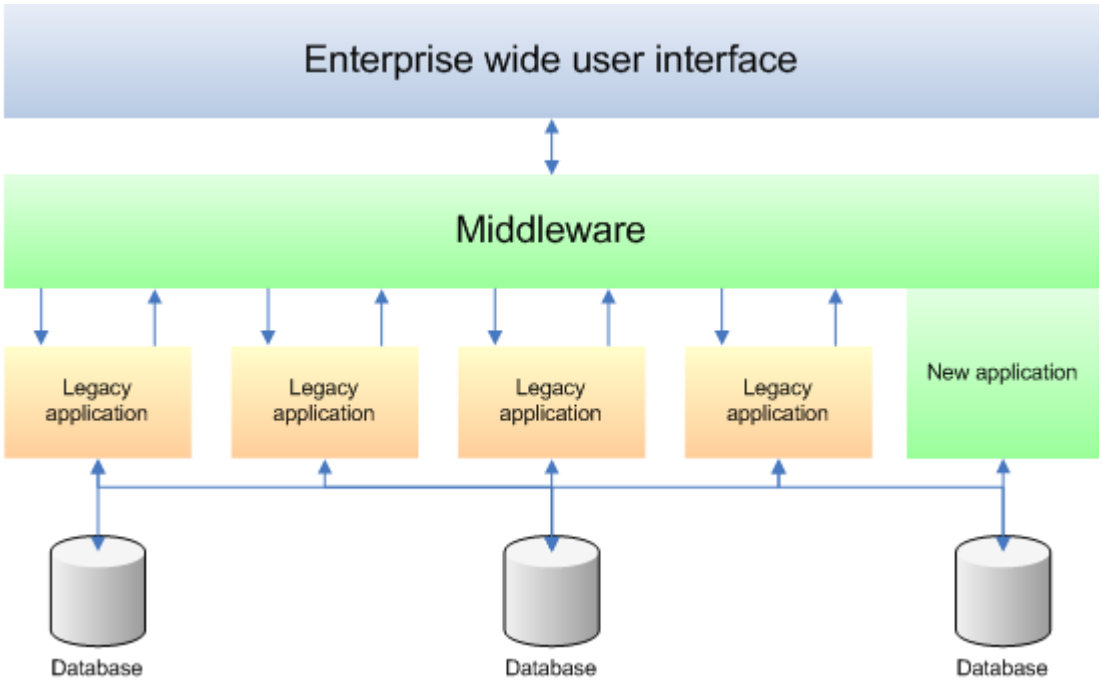
- A single, usable, interface that spans the existing legacy applications,
- A clear line of sight between strategy, KPIs and application behaviour,
- A single view of the customer, with all history, sales and servicing functions available,
- A user interface that reflects the entire business, reinforcing the full range of products and services, supporting product knowledge and cross/up-sell,
- The entire workflows for all customer sales and servicing functions are reflected, guiding people clearly on how to do their job, also known as 'just in time training',
- A consistent, high performance interface that takes only a few hours to learn

The enterprise UI has the following advantages for the IT strategy:

- Your investment in your existing system is preserved. The middle ware provides a wrapper to integrate the disparate systems,
- You have a built-in migration strategy. If some of your applications are not up to the task, then they can be replaced over time. The following diagram shows how a legacy application was replaced by an extension of the middleware. This could easily have been a new application, rather than middleware,

- As you upgrade / replace your legacy applications, there is no change in the user interface. Because the UI has been designed correctly, any changes are smoothly integrated and cause no wholesale changes,
- The abstracted UI provides consistency because it is stable over time. You don't need to keep re-training people as you make updates to the way it works.

The following diagram shows how a legacy application was replaced by an extension of the middleware (right hand, at the bottom). This could easily have been another replacement application where the middleware was then integrated into it.



1.3. How do I know I need and enterprise wide UI?

Most organisations have a multitude of applications that staff use throughout the various end-to-end customer management processes (i.e. sales and servicing) the business depends for success. We've found these systems have the following characteristics:

- Each system has a very different user interface, and each is hard to use,
- Each system was developed in response to a specific business need at the time and so, by definition, only handles a small part of the end-to-end process,
- Staff often need to re-enter data between system,
- Data about customers will be spread among different system,
- The systems don't all talk to each other,
- Staff need to work with many systems simultaneously to achieve their activities,
- Staff workflow is reduced to data entry, with no clear relationship to individual and business goals,
- Training is about learning how systems work, instead of how to do the job.

The following impacts on business, staff and customers are seen:

- Staff take 6 – 12 months to get up to speed on all the different systems, because they all work differently,
- The end-to-end process to complete a customer process takes twice as long as it needs to,
- Your key sales staff are tied up with administrative tasks, significantly reducing their available time to sell,
- Additional staff layers are in place to absorb the increased administrative overhead,
- Staff perform the same functions in very different ways, causing high variations in compliance, consistency and quality of service.

1.4. How do I cost justify an enterprise wide UI?

Almost all businesses are interested in the key performance indicators of sales, profit, customer satisfaction and staff satisfaction. The benefits of an enterprise wide UI are many, including:

- Increased time available for sales and service activities,
- Decreased cost of ownership by having only one system to maintain,
- Reduced training costs and rapid learning time to get up to speed,
- Faster completion of the end to end customer process, with increased customer satisfaction,
- Better quality data, increased compliance and reduced variance.

While all these indicators are importance measures of success, ***time*** is the one with the most profound impact on the business. Let's take a look at this example:

Assume your current sales workforce operates as following:

- *50% of their time is available for sales and 50% for administration*
- *Using 50% of their time, they can achieve $10 Billion in sales*

With an enterprise wide UI, we have at least halved the total administration time. Therefore:

- *75% of time is available for sales, and 25% for administration*
- *Using 75% of their time, there is the potential for another $5 Billion in sales (pro-rata)*

You can easily see that halving administrative time can deliver a potential $5 Billion increase in sales. The additional 50% of available time has a profound impact on the organisation. That time may not be spent just on sales, it can be also spent on servicing and customer retention. Often, reducing churn has a more significant impact on profitability, as we all know it's cheaper to keep a customer than it is to find a new one.

1.5. It sounds too good to be true – what's the catch?

It's not too good to be true. However, there is one catch – an enterprise wide user interface will only be successful if you engage the right skills to design the user interface. As far as the end user is concerned, the interface is the application.

Enterprise wide UIs have been attempted in many businesses and mostly they are spectacular failures. Why? The age old reason is that the end users didn't get it – they couldn't use the interface. The new system technically works, – but it doesn't work the way people work. Rather, it slows them down and gets in the way of them getting on with their real job – sales and servicing.

Think about your own organisation. You've probably seen that your own applications have very different user interfaces – some work OK, but most don't. This was caused by different people designing the different applications or different vendors with different applications. With no consistency in UI design, it's no wonder that good UI is very hard to do.

Good UI design is not a skill not generally found in IT departments. IT is excellent at system architecture and development, but the skills to design a world class user interface that can integrate disparate systems is a complex endeavour. At the end of the day, the UI is less about technology and more about people, workflow and psychology.

In the same way that you wouldn't get the person who installs the elevator system in a new skyscraper to design the building, you need a user interface architect to create the foundation for a scalable, flexible and usable interface.

Correspondingly, user interface designers are not in the business of telling people how to code their applications. Successful IT projects come from two key things:

1. A team made up of the business, IT and UI designers,
2. A systematic and reliable user interface design process.

The next section describes why enterprise wide UIs are hard to deliver successfully, followed by the main steps in creating an enterprise wide user interface.

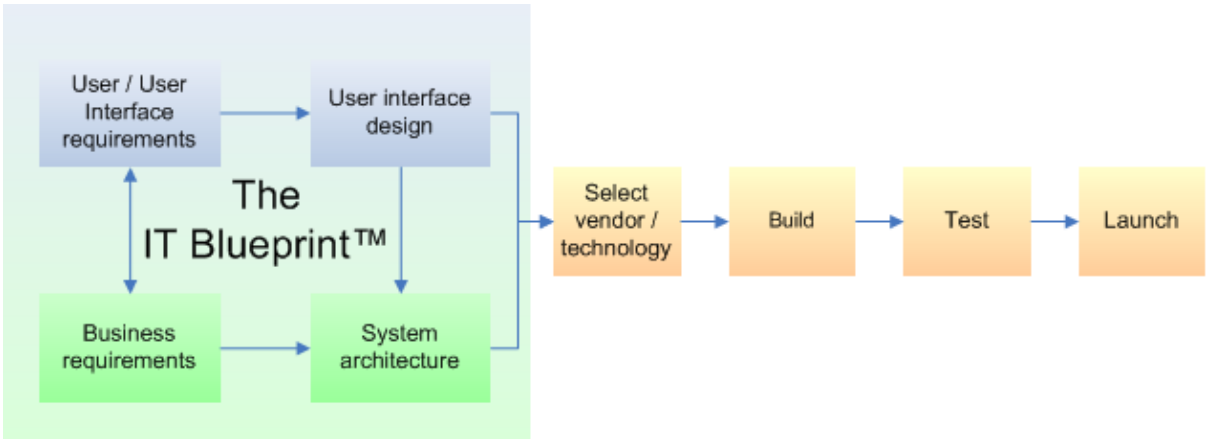
1.6. Why enterprise wide UIs are hard to deliver successfully

We've covered many of the reasons why most large software development is unsuccessful, but here is a summary of the relevant ones:

- The application base is picked first, without the full requirements being known. This means it is very hard to make the application bend to the way the organisation works,
- The UI is designed by developers who do not understand the psychology of people and work,
- The UI embeds processes as they are, rather than looking for opportunities to simplify,
- The applications are designed to capture the most complex situation and, therefore, make simple situations very complex.

1.7. How to design an enterprise wide UI

The steps to design an enterprise wide UI follow our IT Blueprint process. Its primary role is to provide certainty of the outcome. The IT Blueprint does the same for IT as the architect's blueprint does for building and construction. Everyone involved in the project has the same clear vision of what the project will look like when finished.



1.7.1. User / user interface requirements

Capturing the user / user interface requirements is all about how people go about their work. It involves observing high and low performing staff at work and documenting the activities they engage in within the major sales and service workflows. Most importantly, we need to capture the decisions made during the activities and the subsequent permutations. The information collected from this step also contributes to the business case. We document simple metrics such as the time take to complete a process, errors made, rework experienced – all these add to the cost of business. By examining the best case scenarios, we identify the likely best case situations. The difference is what contributes to the cost justification.

An expert usability review of all existing applications identifies the strengths and weaknesses of each, with a focus on documenting the functions delivered through each.

We interview customers about their experience during the sales and service process to understand there likes and dislikes about the end-to-end experience. Interviews with the business provide a strategic framework for what the application will and will not do in terms of supporting KPIs.

All this information is mapped against the 'best practice' workflows the business should be delivering – the last thing we want to do is embed poor practices in the interface. All that does is ensure that everyone is operating at the same low level.

The result of the requirements phase is a statement of what the application must do to deliver the sales and service workflows that are valued by customers and meet business KPIs of quality, satisfaction, sales and profitability.

1.7.2. Business requirements

In parallel with the user / user interface requirements, business analysts support the process by documenting the business processes, rules and subsequent use cases to reflect the system messaging to integrate the applications. The business domain model

is supported by the various state diagrams and other non functionality requirements that reflect what the system must do. In contrast, the UI requirements and design steps are about *how* the application will behave.

The analysts use the results of the user / user interface requirements to ensure the business is not attempting to deliver services that are not needed or valued by staff or customers. Conversely, the UI designers use business requirements to ensure services are not delivered that could cause the organisation to go broke trying to do things that aren't profitable.

1.7.3. User interface design

User interface design is about creating a clear line of sight between strategy and application behaviour. Our method, XPDesign, is to IT what architecture is to the building and construction industry. Its job is to bridge the gap between requirements and design through a systematic, scientific and repeatable methodology. It is critical to get the interface right the first time, ensuring that users and management accept it and it aligns with strategy to deliver high performance.

Our approach to design starts by deconstructing work into generic activities. These activities are associated with specific user interface patterns. Patterns are standard solutions to standard problems. By using patterns, the user interface has a high degree of consistency. We then create a structural framework to organise the activities. This usually takes the form of high level workflows and a scalable information architecture.

During this process, the development team is building a prototype. This is subject to usability testing to confirm the design decisions and make any final tweaks to the UI. The prototype will have been built in the target environment so it can be re-used.

1.7.4. System architecture

Finally, the system architects use the UI design, and business requirements to architect the solution. They define, visualise and construct the various software artefacts, including the application specification, system domain and system scenario mode, and lastly, the subsystem and component models.

The involvement of the business analysts early in the UI design stage ensures that the resulting interface can actually be built.

1.8. Moving to the build stage

At this point, the four preceding steps of UI requirements, business requirements, UI design and system architecture has delivered the architecture plans for the enterprise wide UI. It has been tested and known to be usable and reflect people's work, and IT has confirmed that it is doable. Everyone has a clear view of the end goal and they all know it will work.

You can now choose the right technology solution in the same way that you choose the right construction team to build your new skyscraper. You can clearly cost the exercise because you know exactly what you have to build. And all members in the development team have a clear and shared vision of the end goal.

1.9. In conclusion

The IT Blueprint gives certainty of outcome, but is heavily dependent on the quality of the UI design process. The traditional user-centred design methods are not sufficient to deliver an application that successfully integrates business, staff, customer and IT requirements. PTG Global's XPDesign methodology provides the design team with a scientific, predictable process to move from requirements to design and deliver a use interface that is scalable and flexible over time.

An enterprise wide user interface preserves existing application investment, and provides the means to upgrade / replace legacy applications without any effect on the user interface. This gives staff consistency and supports their achievement of activities that have a direct bearing on the achievement of business KPIs.

2. About the Author

Craig is the founder and Managing Director of The Performance Technologies Group (PTG Global), with over 15 years in user experience, user interface design and change management.

Craig runs the R&D function at PTG, having produced a number of world firsts including XPDesign – the first systematic methodology for user interface design and Certified Usable – the first guarantee for usability and user experience.

Craig has been the primary architect behind many of Australia's most popular websites including CBA, Virgin Blue and ASIC and works on cutting edge technologies such as touch, medical and special-purpose applications.

Craig holds a Masters qualification in organisational psychology, is a member of the APS and the APS College of Organisational Psychologists and is a Registered Psychologist in NSW. He is also an Associate of the University of NSW and Macquarie University.

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