

Building standard software for the unique business

The course of good product software and that of the processes in good business are seemingly contradictory. Good business differentiates as it matures, good software tend to standardize with time. This paradox is the essence of designing business solutions.

Software should engage standard best practices in business and, at the same time, adapt to the uniqueness. Drawing the fine line between to two requires understanding of configuration and product road mapping.

This article presents our view to product development, which is here to cater to the diverse and evolving SMB processes. It shows how the approach balances the dilemma between customization and configuration, when both have their own advantages.

About the Author

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Venguswamy Ramaswamy, or “Swamy” as he is better known, globally heads the TCS Small and Medium Business (SMB)-iON. iON is a strategic business unit of TCS and provides end to end business solutions to the SMB segment.

In his previous role, he was the Director of TCS' Global Consulting Practice (GCP) and was instrumental in the structural formation, development and positioning of TCS' consulting offerings. Consulting Magazine has named him amongst the top 25 consultants of the year 2007.

During his 16 year tenure at TCS, Swamy has held several strategic positions including managing key customer relationships, building and heading the Process Consulting group, managing the Corporate Resource Management function, leading numerous Centers of Excellence, as well as launching TCS' first steps in geographies such as Hungary and China.

Swamy is a firm believer in the power of IT to create business value and is known for his interest in Innovation & Quality and expertise in Six Sigma. He is also recognized as a champion of many digitization drives within TCS, including deploying digital platforms for Six Sigma, creativity and talent acquisition.

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Can standardization be the answer to differentiation?

Should the software prescribe processes to business? Or, it should simply adapt to the process in place. An idealistic answer would indeed be that good software should instill good processes, or at least some best practices. In reality, the answer is not that simple.

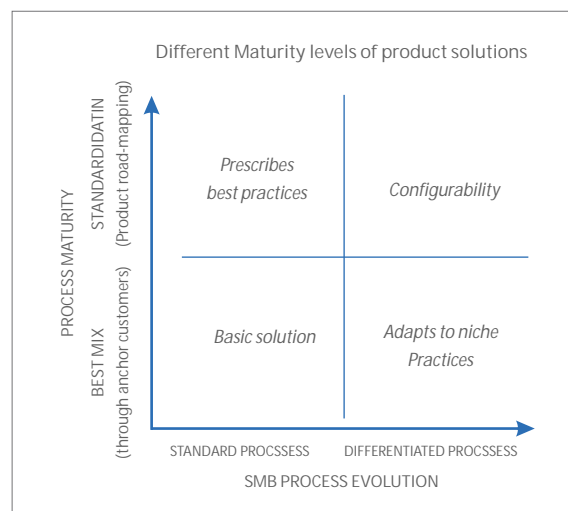
Consider the advent of ERP two decades back. In 90's it was a mantra for business transformation. Business saw ERP as a package of best practices taken from the best run companies. Customizing ERP was frowned upon with the concern that it would dilute its purpose. Today, when we look back at the evolution of ERP, we rarely find a serious implementation happening without customization. In fact, the more sophisticated the business, more customization it would require. Why has it been so when several industry standard products carry practices picked from so many good companies?

Every good business has stood the test of time on its unique processes and culture. It differentiated on those to survive its distinct environment. Expecting a business to adopt a process bluntly, for the sake of it being a best practice somewhere, has the downside of it losing its uniqueness and identity. A top company would have very little things in common with its peers – one of the ironies of benchmarking. So when we prescribe “one size fit all” software, we go against some business principles.

Nevertheless, our admission of the idealism in enforcing best practices through software should not give way to mass customization. Having spent years in custom IT services even before we saw mature ERPs, we know the burden of customization. One thing we learnt in this – software is continuing to standardize while each business continues to differentiate. This contradiction is at the very heart of business software architecting. We will explain how.

Configuration over customization

Software is always designed for re-use. However, the common perception around this principle is that design should allow better re-use of code. We call this as productive development. To one who is focused on



business solutions, re-use of functionality is key criteria. This is productive implementation and avoids development.

In fact, this essence was clearly seen in ERPs. A good ERP would inherently have parameters to tune software with processes by exposing existing functionality. For instance, production of an item could happen either on standard Bill of Material (BoM) or with different BoM with every booked order. The software would allow either by changing simple parameters. This is called configuration. In simple terms, it would mean a catalogue of functionalities that can be chosen when the software is set up. Coding is minimal, if not no coding at all.

Yet, despite software designed for high configurability, the uniqueness of the process may demand functionality beyond configuration scope. Taking the same example of BoM, a business may have the habit of changing the BoM during assembly without cancelling the order. The software might not logically support this. In such case, there are two ways to go about it. One, the business decides to standardize its processes to support the system. Two, it ask for changing the software, which would call for coding. This change is termed as customization. The choice for going for it would depend on how critical is the process in differentiating the business.

Hence, customization would be a candidate in any IT solution that tries to achieve some perfection. The cost-benefit is the deciding factor. For the business, it is simply how well it differentiates the business. To the solution provider, the approach however is quite different.

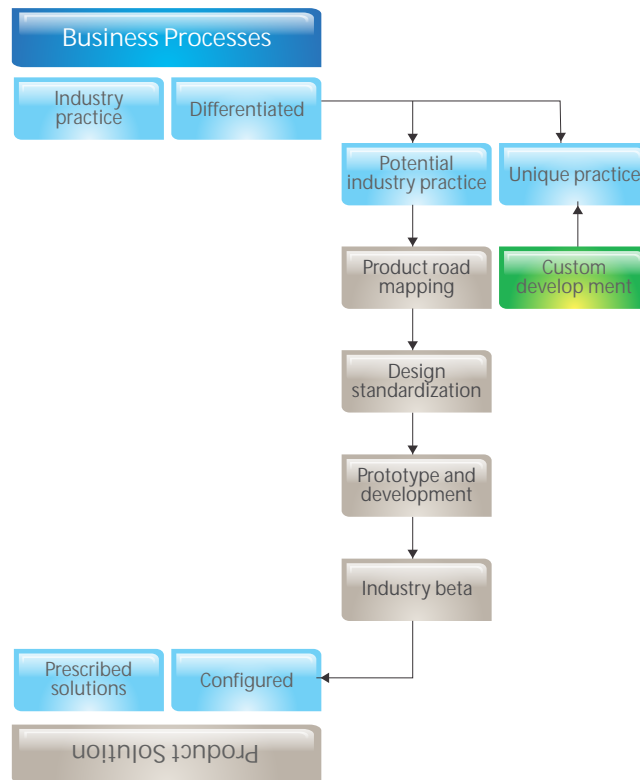
Separating out customization from software roadmap

Outright customization is not the best way to approach uniqueness of processes. This is not a not a sustainable model. To the business, the cost of solution would be high in capital and maintenance. This also restricts the business to leverage on the future solution enhancements.

When configuration does not meet the requirement, it is usually requires substantive change in code. In such a case, we first explore how much we can standardize the functionality so that it could be used across companies. This may require adding functionalities and design elements beyond the specific requirement of the customer.

The standardized functionality is then added to the product roadmap for it to come out in a later version. This ensures that the software goes through adequate prototyping, quality and performance tests, and beta testing. The beta test is not confined to the immediate customer but other businesses who potentially need the feature. This makes the enhancement at par with software quality. In addition, beta tests with multiple firms reveal scenarios for refinement, which the source company would have missed in framing.

On the other hand, if the requirement is unique and likely not to be adopted by other companies, the customization is branched out of the product roadmap. The customer pays the cost to the development since it is dedicated to her. However, this is not executed in the same fashion as we incorporate



enhancements within the product. Rather, such development happens in the traditional outsourcing model. TCS, being from this background, offloads this work to its mainstream outsourcing services. This ensures that the culture of systematic product development is not affected by it.

Such customization, however, could be costly in the SMB segment. At the same time, if the change adds important capability to the business, it is difficult for the firm to defer it. We support an alternative low cost model for customization in our product design. The software functionality is exposed through standard programming interfaces (commonly called API or Application Programming Interface) to allow external developers to build custom modules around the standard solution. The API shields the intricacies of the software code and exposes simple semantics for external module to exchange data. This approach is usually handy when the customer has its own IT department to develop simple software. We see the encouraging trend in some businesses tapping community development. One example that we see in education is in the institute allowing students to create real-life custom modules. The sanity of the module is largely supported by our API design, documentation, and developer programs.

Prescriptive software can also adapt to unique processes

Let us go back to the debate we started with. A software prescribing processes to business or striving to adapt to those in place are two contradictory roles it plays. Both the purposes have sound economics and business reasons. Good software development handles this with a methodology that uses two principles.

One, standard solutions should always encapsulate practices tested with multi-customers; it would be tested on business productivity and strategic value. This adds credential to the prescriptive role the software plays. The other aspect is in accepting that configuration always has a limit. High configurability has the downside of making the solution too complex for the business to decide the best fit. It may also affect the quality of the software, like performance. The product management needs to decide this threshold. This is an important aspect of product road mapping.

Hence, as we see customization likely in large-scale implementations, good software would provision for productive customization. It does so economically by following open standards and design practices like API. The software is then adaptive only to extent it does not deviate from the value it delivers to the business in form of standard and tested business processes.

TCS, however, has the advantage of using its outsourcing services to complement its SMB products in unavoidable customizations. While we do so, we would ask the question – would you wait for the software roadmap to deliver the same in a form that is tested by industry? Or, you would like to go on your own and bear the cost that would not abate easily. My erstwhile experience with large companies says that the decision is purely strategic. However, for evolving SMBs adopting new practices, we like the software to be as prescriptive as possible.

Why iON

iON provides comprehensive solutions that address varied IT requirements. From network to ERP, iON is offered as a single service, in a pay-per-use model, allowing you to leverage the solution's true potential. iON ensures integration of all processes along with ease of use.

iON promises:

- High performance in normal broadband;
- Stringent security and data privacy ;
- Guaranteed availability (99 per cent uptime);
- Disaster recovery;
- Reduced need for IT staff.

iON, therefore, manages your processes while you use the software. You gain from:

Integrated solutions

We ensure that all your solutions are connected. For example, if you are using a CRM along with an ERP, and have a document management system to organise your files, we ensure that these solutions are connected and work as one. So for you, it is simply IT and not applications.

Increased agility

We bring in the agility to keep pace with changing processes or a new line of business. We help you configure the processes to work differently or simply choose new practices recommended by the software. Our activation system flags on best practices while the system is running. As you pick and choose, we give you more options to choose from.

A pay-as-you-use model

This model eliminates capital investment as we provide the IT infrastructure and software on rent. You pay as you use and only for the number of users who actually use the software. The rent is charged monthly. Typically, the cumulative rental for three years is equal to the capital cost of acquiring similar or lesser software with one-time payment. Usually, the ROI exceeds rental within three months, when best practices are well followed. The rental includes maintenance and training, with no hidden costs.

Personalised solutions

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Automatic upgrades

We continuously invest in our solutions to ensure best practices. We enrich the software based on user feedback and business and statutory changes. We ensure the upgrade without disrupting the user.



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About iON

iON is Tata Consultancy Services' strategic unit for Small and Medium Business. iON provides end - to - end business solutions to the SMB segment, the growth engine of the economy.

iON caters to the needs of multiple industry segments with best practices gained through TCS' global experience, domestic market reach, skills, know-how and delivery capabilities.

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