

IBM Podcast

MATHENY: Welcome to this IBM podcast, Paving the Way to Business Value Through Successful Software and Systems Planning. I'm Angelique Matheny with IBM. How do software organizations achieve above-average returns from their software and systems investments? They plan for measured improvements that balance opportunities with risks.

Today, Walker Royce, Chief Software Economist for IBM Rational Software, discusses how software organizations can streamline planning, improved decision making and achieve more collaboration through architectural and business planning techniques.

Walker joined Rational in 1994 and led Rational Services Organization. He's managed large software engineering projects, consulted with a broad spectrum of IBM Rational clients worldwide and developed software management approach based on an iterative development industry best practices and architecture first priorities. Walker, welcome to the podcast, and thanks for joining us.

ROYCE: Sure. Good morning.

MATHENY: Let's start with this question. What discriminators do you see in organizations that have

improved software economics?

ROYCE: I'd say the number one thing you need is objective insight and know-how. If you know where you are, where you're going and how you're going to get there, then organization has the ability to plan and steer projects, and that's important. They still need to deal with dynamically changing circumstances to optimize the value and minimize the cost of software delivery.

So to do this, organizations really need three things: number one, a good understanding of their as-is situation in some quantifiable terms; number two, a shared vision of where they want to get to in quantifiable terms; and then, finally, they need an honest plan about how to get from the as-is situation to the to-be target, with interim milestones.

Now, to do this, you typically capture objective measures of value -- and by that I mean the scope and opportunities -- and then objective measures of cost, namely the resources and risks, and present them with some meaningful instrumentation.

This results in views into past performance, current status, predicted estimates that complete including values and trends and variances from plan. And for both software

projects and larger software organizations, the bottom line impact of these best practices is higher predictability of the outcomes and improved governance.

MATHENY: You mentioned the importance of honest planning. What are some examples of good planning techniques?

ROYCE: I think good plans require two dimensions of understanding and quantification -- and those two dimensions are progress and quality. So progress is sort of the managerial dimension. This is the business portfolio context, the business constraints and the processes for development and delivery.

Quality is really the technical dimension, which includes the structure, the dependencies and behaviors of the product or product line or service or system being delivered. And these dimensions provide a balanced context for assessing where you are, where you need to go and how to steer your activity.

Now, each of these dimensions need benchmarks and measurements and real-time instrumentation to help guide your decision.

The technical dimension needs models and architectures and

quality metrics that are derived from the evolving engineering artifacts. And then the management dimension requires resource estimates and time accounting, financial metrics, scrap and rework measures and honest measures of uncertainty derived from precedent experience, the current project status and honest forecasts of future activity.

MATHENY: So, Walker, what's the biggest roadblock that challenges most organizations?

ROYCE: Well, in our experience, I'd say the number one pattern of failure is something we call false precision. And this is really what I meant by a dishonest plan.

Treating systems or software delivery as an engineering discipline lulls us into believing that more detail and requirements and design and more detail in plan constitutes a better understanding of the product to be delivered or the forecasted outcomes.

And rather than false precision, our engineering artifacts and management artifacts need to evolve with honest precision, starting with coarse estimates, when our understanding is relatively coarse, to then finer-grained artifacts as our understanding evolves, with a very transparent exposition of the uncertainties involved. And by that I mean the risks still inherent in the plans and the

products and the things you really don't know well yet.

Now, IBM Research has been investing in new techniques for quantifying this uncertainty. They're working on some products called Financier and Tempo, and we've been using them in live client situations with excellent results. And these capabilities are being transitioned into commercially available releases of our products.

MATHENY: And our last question today, how can organizations achieve above-average returns from their system and software investments?

ROYCE: Well, through investments in, I think, three things. The first is process improvement and treating the development and delivery process as an integrated set of both creative and engineering activity. There are best practices inherent in agile and modern software engineering methods, portfolio management and enterprise architecture disciplines. These are key.

The second investment is in tooling and automation support.

And so employing collaborative platforms that help teams manage the information in the creative activities like enterprise architecture, modeling, portfolio management and planning is important.

And then exploiting automation in the engineering activities of coding, testing, changing, releasing and maintaining where real process rigor and instrumentation can gather insightful quality metrics.

So the first is process improvement, the second is tooling automation improvements, and the third, which to me is the most important, is through investments and expertise in measured improvement. And the foundation of this is something I call know-how.

Know-how is really the basis of our market reputation. So for IBM and Rational, it is the collective knowledge base in our people's heads, the best practices that we've compiled over the last few decades, and our client experience in software productivity improvement across a very diverse spectrum of software development and delivery domain. And although we don't charge explicitly for our know-how, it is likely our biggest differentiator and the reason we lead our markets with our tools and people.

We have more know-how in measures, instrumentation and best practices than any of our competitors and most of our customers. We don't yet have enough scientific proofs, but we have very credible cause-and-effect relationships like value traceability tree, and decades of customer experience and about 2,000 savvy field representatives performing this

every day with the world's smartest and most advanced software delivery organizations.

MATHENY: Walker, as always, thanks so much for sharing your for our podcast, Paving the Way to Business Value Through Successful Software and Systems Planning. We really appreciate it. That was Rational's Walker Royce, Chief Software Economist.

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This has been an IBM podcast. I'm Angelique Matheny. Thanks for listening. Keep tuning in as Rational talks to you.

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