

2011  
THE STATE OF  
REQUIREMENTS  
MANAGEMENT

THE REPORT

# SUMMARY

## KEY RESULTS

- > **Innovation:** Innovate or die? More like *iterate or die*. Breakthrough new products and apps often steal the headlines, but a stated goal for 88 percent of projects is “enhancing existing products.” It’s all about continuous iterations. Listen, plan, build, test. Rinse and repeat.
- > **Process:** Welcome to *WaterScrumFall*. There’s no question that Agile as a development movement has gone mainstream, but the reality is the largest segment of teams, 40 percent, are not purists following any one prescriptive methodology. There is no one perfect silver bullet process – Waterfall, Agile (Scrum), RUP or otherwise. Instead, teams are using a blend, or hybrid, of processes to develop software. Thus, one of the emerging trends in 2011 is toward flexible Application Lifecycle Management (ALM) tools that are easily customizable to support multiple, continuously evolving processes.
- > **Complexity:** This stuff is hard, and only getting more complex. A combined 75 percent of respondents are managing projects with at least 100 requirements; and 20 percent are managing projects with 1,000 requirements or more. And, the Guinness Book of World Records for the “Largest Requirements Specification” goes to.... To add to the complexity, requirements aren’t static. On average, more than 70 percent of teams are spending at least 10 percent or more of their time managing changes to requirements. Thus, it’s no surprise that failure rates remain high – only 17 percent of teams have a success rate of 80 percent or higher. Can you say, change control?
- > **Customers:** What is the number one metric for measuring success of development projects – revenue? quality? cost savings? Think again. It’s customer satisfaction, at 86 percent. Keep the customers happy and all will be good in the dev world. Consistent with this theme, the number one challenge facing teams, at 73 percent, is “gaining a clear understanding of what customers want,” and the number one source of product ideas and requirements is “feedback from customers and partners,” at 82% percent. Thus, a visionary executive like Steve Jobs is great if you’ve got one, but staying in sync with your customers throughout the dev process is a valuable step toward building products they’ll love.
- > **Tools:** Surprise, surprise – 83 percent of teams still use basic Microsoft Office docs to communicate requirements. Aren’t those the same software tools our kids use to do their homework? It’s time for specialized tools. With complexity increasing and failure rates still high, the a-ha moment has arrived for teams adopting specialized software to help with requirements, specifically those that provide collaboration and visualization. As illustrated by “requirements collaboration and management software” topping the wish list of tools in 2011 at 60 percent and “requirements modeling and visualization” coming in second at 45 percent. New year, new tools.

# SURVEY BACKGROUND

In 2008, Jama Software and Ravenflow released the first State of Requirements Management Report in order to cut through the hype and determine the real trends and successes in requirements management. In this 2011 report, gain insight into today's evolving world of requirements management. Some things have changed, while the fundamentals remain.

We invited industry professionals to participate in the study in exchange for a first look at the final report. This report contains survey responses from more than 800 participants, collected between November 15 and December 10, 2010. Ninety-two percent

of participants completed the entire survey. Participants represented a world-wide audience and a diverse sample. See the categories below for the participants' breakdown by organizational role, industry, team size and location.

Throughout the report, we refer to teams developing products. In today's development world, "products" can be software, systems or other projects. For the purpose of this survey, the words are interchangeable – it's about the process.

For privacy, all survey participants, responses and comments remain anonymous.

**Survey size:** 808 participants.

**Survey dates:** November 15 to December 10, 2010.

**Sponsored by:**



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## Role in the organization

|       |                                   |
|-------|-----------------------------------|
| 44.8% | Business / requirements analyst   |
| 19.7% | Project management                |
| 8.3%  | Product development / engineering |
| 7.9%  | QA testing                        |
| 6.9%  | Product management                |
| 6.4%  | Executive management              |
| 5.3%  | Outside consultant                |
| 0.7%  | Usability / design                |

## Industry of organization

|       |                        |
|-------|------------------------|
| 26.7% | Software & technology  |
| 21%   | Financial Services     |
| 12.7% | Healthcare & medical   |
| 12%   | Government             |
| 9%    | Consulting             |
| 5.6%  | Aerospace & defense    |
| 5%    | Energy & utilities     |
| 4.5%  | Telecommunications     |
| 2.3%  | Education & non-profit |
| 1.2%  | Media & entertainment  |

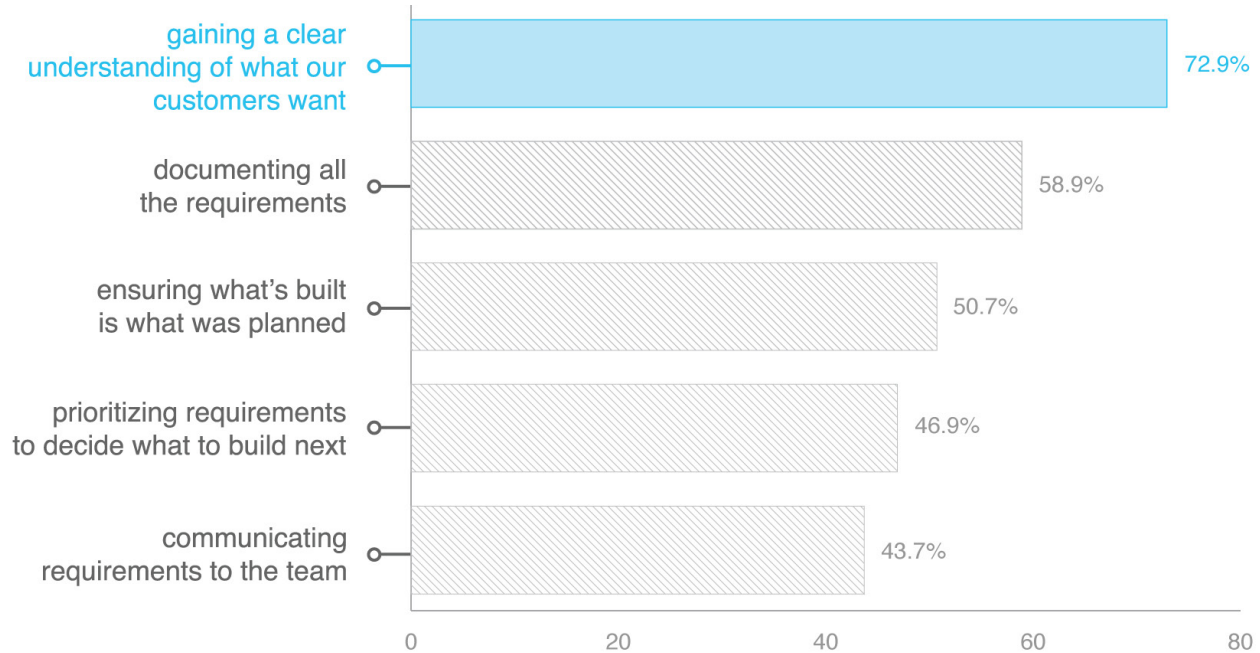
## Location of the team

|       |                              |
|-------|------------------------------|
| 41.3% | Less than 10 percent virtual |
| 16.7% | 10 to 25 percent virtual     |
| 16.7% | 25 to 50 percent virtual     |
| 3.6%  | 50 to 75 percent virtual     |
| 11.7% | More than 75 percent virtual |

## Size of the team

|       |               |
|-------|---------------|
| 57.6% | Less than 25  |
| 26.8% | 25 to 50      |
| 10.3% | 50 to 100     |
| 3.8%  | 100 to 250    |
| 1.5%  | More than 250 |

Requirements are building blocks of innovation. What are your company's **biggest challenges**? Mark all that apply.



## Your customers hold the key to the next big thing. Do you really understand their needs?

Innovation is tough. As a buzzword, it's ubiquitous. But like the saying goes, "easier said than done." Today's economic pressures make innovation more difficult for companies, as fewer teams have access to a plentiful R&D budget. That makes already precious R&D funds even more valuable.

According to Booz & Company<sup>1</sup> Global 1000: How the Top Innovators Keep Winning, "[Innovators] must pay careful attention at the ideation stage to what customers are

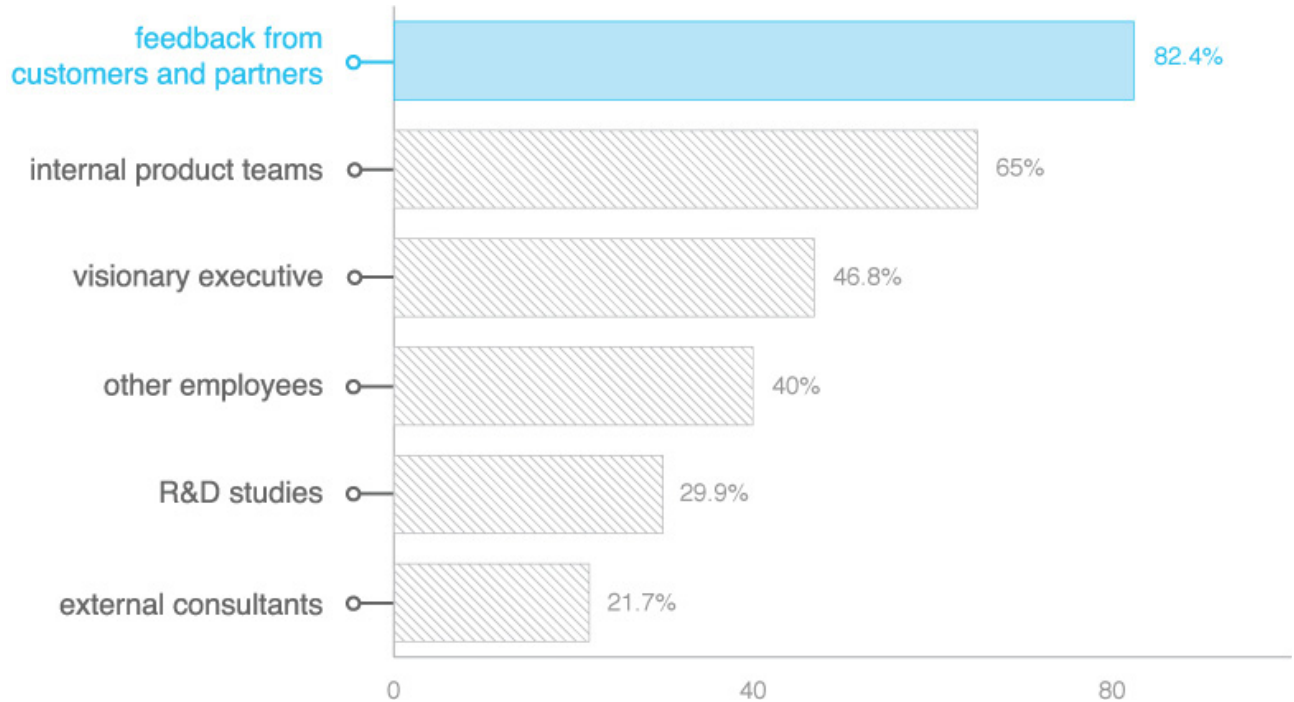
looking for in the products they choose." These innovators leverage customer feedback in order to clearly understand their end-users' needs, creating not only innovative products but also products their customers will use.

A close second in the race for biggest challenge?

Documenting and managing requirements. Not surprisingly, the top three challenges match the big three in our 2008 report. There's no substitute for the fundamentals of requirements management: understanding

what customers want, documenting requirements and ensuring what's built is what was planned. These are the real challenges that teams face when developing products their customers really want. What's this mean? Managing requirements effectively will help you innovate successfully.

What are your sources of **new product ideas** and requirements? Mark all that apply.



## Throughout the innovation process, the customer’s voice must be present.

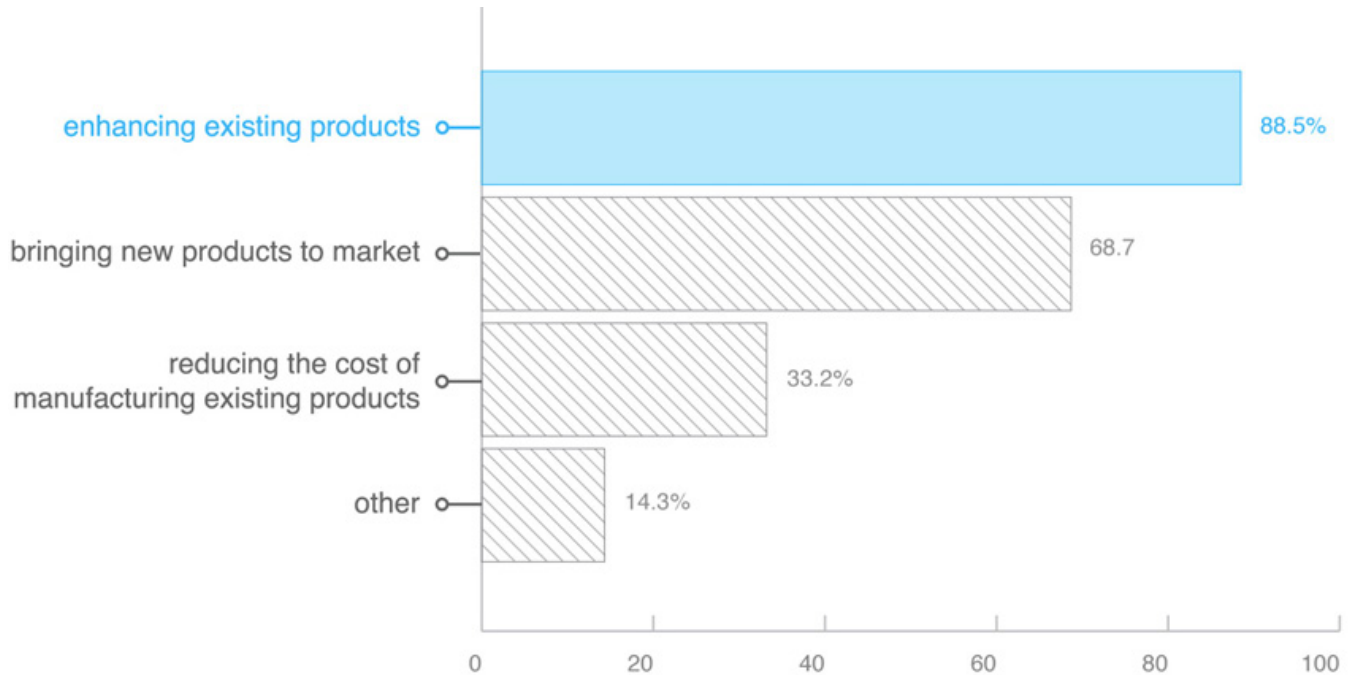
Web technology has enabled us to be more connected than ever before. Brands are engaging with customers and empowering them to reach out and share their ideas and feedback. Keep your customers in sync, ask them for feedback and they’ll help you build a product they love. But, blind feedback up front isn’t the answer. Studies show that customers have a hard time articulating their real needs, so it requires a talented product manager or business analyst to observe, ask and listen to

customers in a more targeted, ongoing manner to elicit the true requirements. Ideation is important, but collecting ideas is only half of the battle. According to a 2011 MIT Report on the Top 5 Myths in Innovation<sup>2</sup>, “Most innovation efforts fail not because of a lack of bright ideas, but because of a lack of careful and thoughtful follow-up.” Correct your weaknesses by integrating customer and stakeholder feedback throughout your innovation process. Your ability to spot a good idea and follow

it through into development is as important as your ability to generate new ones.

Ask your customers for targeted feedback throughout the process, close the loop with them and they’ll thank you for it later.

What are the **goals** of your team's projects? Mark all that apply.



## It's all about iteration. Listen, plan, build, test. Rinse and repeat.

**Companies focus on "making incremental changes to keep sales up & current customers happy."**

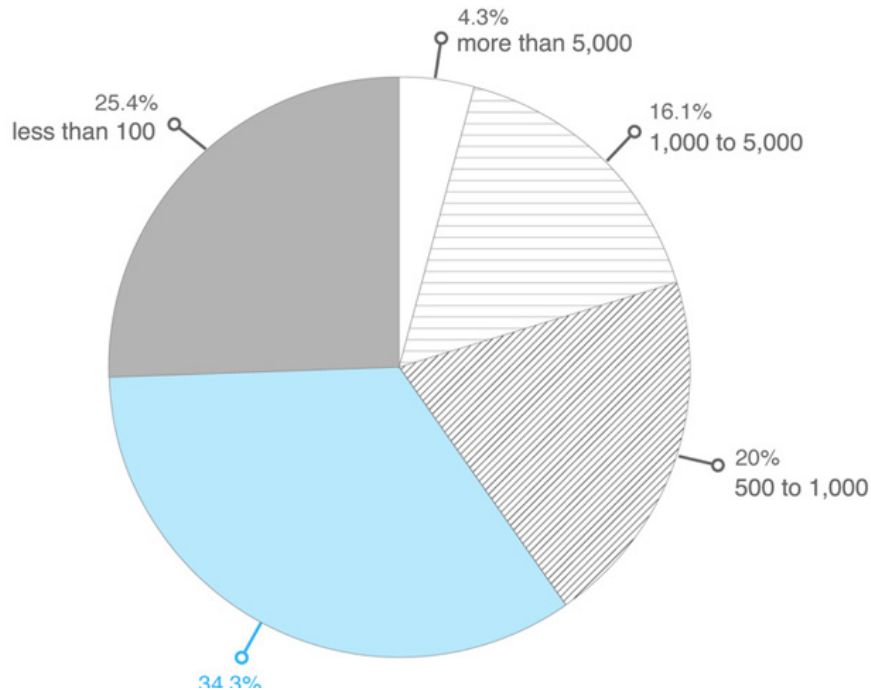
– Harvard Business Review<sup>3</sup>

Projects often have multiple goals, but based on the survey results, the most prevalent one is "enhancing existing products." We call this out because often the breakthrough new product is what steals the spotlight and grabs all the headlines.

However, the reality is we spend more time and energy on incrementally enhancing existing products to make them better. With processes evolving to be more iterative, this stat doesn't come as a surprise. In addition, from a financial

perspective, there is typically less time, risk and cost in improving upon an application or product that already exists, versus gambling on bringing new products to market. For comparison, these results were similar to the findings in the 2008 survey. With one exception – we had double the participants mark "other" and cite goals that included "being proactive with new technology," and "automating manual processes," as other top goals of their projects.

Let's talk about **complexity**. On average, how many requirements does a project contain?



## Building great products? It's hard. And it's not getting any easier.

More than 70 percent of projects contain at least 100 requirements, and 20 percent of projects contain at least 1,000. That's a lot of requirements to track. As software technology products become more complex, so do the requirements. As an example, think about how much your cell phone has changed in the past two to three years. We don't just make calls, but also have apps, send emails and surf the Web.

The complexity of this question provided some interesting

segmentation.

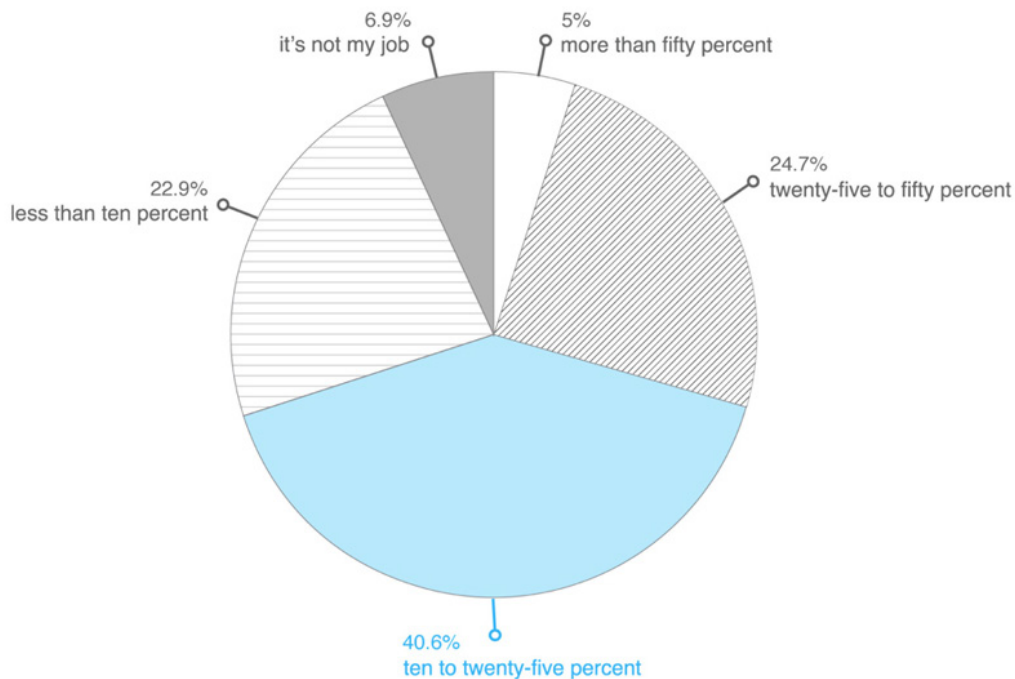
Not surprisingly, documenting all of the requirements is as important as customer feedback for teams with more than 5,000 requirements.

Team size was also correlated with number of requirements, as more than 60 percent of teams managing at least 5,000 requirements also had at least 50 team members. Almost 80 percent of teams with less than 100 requirements also had less than 25 people.

The Gartner Report: Key

Issues for Application Lifecycle Management, 2010 notes<sup>4</sup>, "Improvements in ALM introduce structured planning and control to tie together manual work streams and create more-complete and actionable views from which to manage." These improvements can help your organization manage complex projects without losing valuable requirements definition and development time.

## What percentage of your time is spent weekly dealing with changes to requirements?



## If there is one constant, it's that the requirements will change.

There's no question, it's frustrating to lose time managing changes within requirements. If you work in development long enough, you'll collect several war stories of your own. In a perfect world, the specification wouldn't change, everyone would know it, live it and execute flawlessly against it. But this isn't a perfect world, requirements change, and often change for good reason.

As development lifecycles progress, we naturally learn more about what it is we're

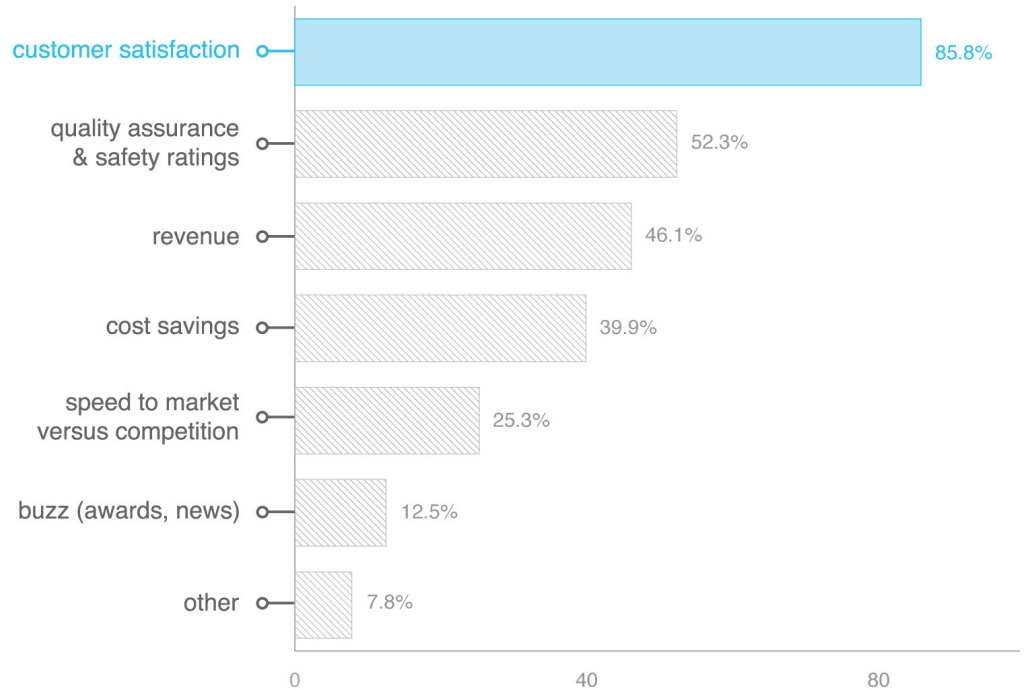
building and why. Thus, the requirements also must evolve to support the desired outcome and satisfy customers. The solution isn't in finding ways to minimize change. The solution is in finding ways to embrace the right changes and keep the entire team in sync with the changes throughout the process. This prevents them from falling into the classic traps which lead to frustration, defects, over-runs and scope issues.

It's no surprise, but within the participants who spend at least

50% of their time managing changes to requirements, a whopping 25 percent admitted that less than 20 percent of their project or product launches were delivered on-time and on-budget. Successful product launches were much more likely for participants who spend less than 10% of their time managing change, as more than 23 percent had a success rate of greater than 80 percent.



How do you **measure success** of your products or projects? Mark all that apply.



## The best metric for success is a happy customer.

In the end, it's all about delighting your customers. The number one metric for measuring the success of your projects isn't revenue, speed to market or even cost savings. It's customer satisfaction.

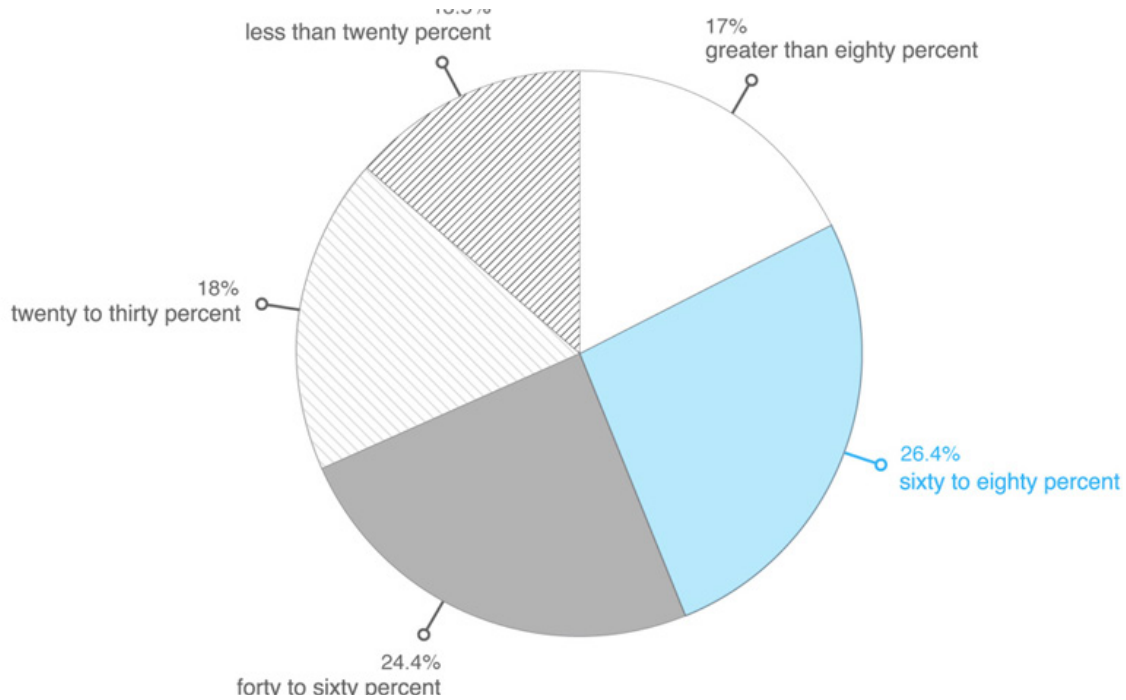
The analysts behind Booz & Company's Global Innovation 1,000 would agree<sup>5</sup>, as they explain that there are "three customer- and market-oriented capabilities that matter most: Gathering customer insights during the ideation stage, assessing market potential during the selection stage,

and engaging with customers during the development stage." To build innovative products you must engage your customer within each stage: ideation, selection and development.

Don't expect the importance of your customer within the development process to drift off in the next few years, either. Results of our first State of RM Report in 2008 showed that almost an identical rate of participants (83 percent) measured success by customer satisfaction.

Over **45 percent** of teams using customer satisfaction as a metric for success had a success rate of over 60 percent

How often are the projects or product launches **delivered on-time and on-budget?**



**Collectively we're doing better, but the reality is failure rates remain high. Too high.**

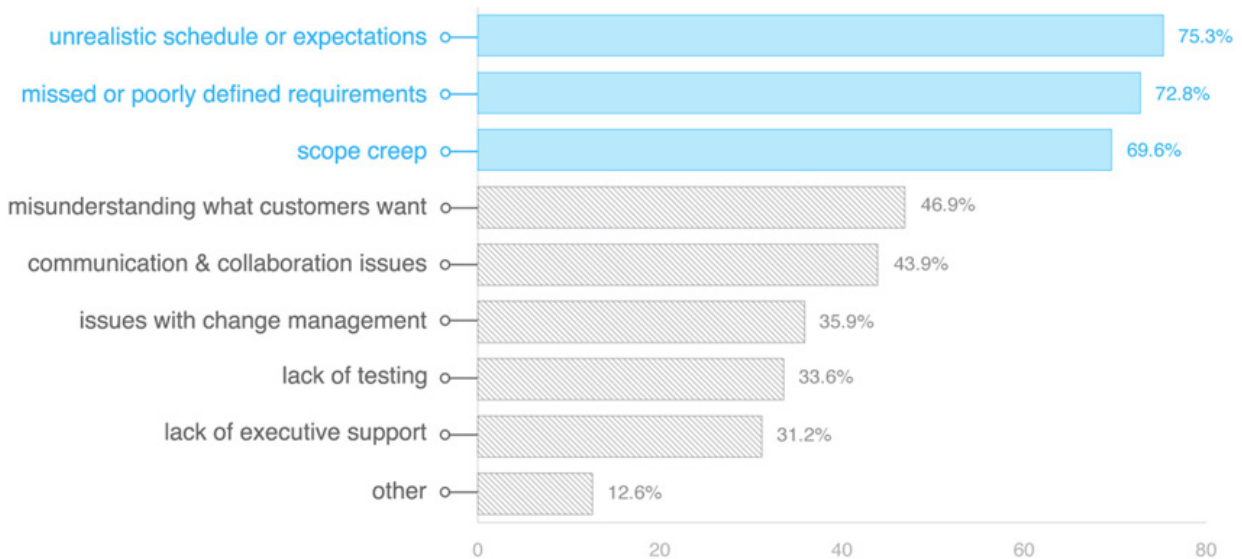
For teams with a success rate of **20 percent or less**, scope creep & unrealistic expectations are the main causes for failure.

Only 17 percent of projects or product launches are delivered on-time and on-budget at least 80 percent of the time. Most projects have a success rate of less than 60 percent.

But, there is some good news. In the 2008 State of RM Report, we found that only 6 percent of projects had a success rate of at least 80 percent, compared to today's 17 percent. Also in 2008, more than 22 percent of projects had a success rate of less than 20 percent. Today, that percentage has dropped almost 10 points.

Our failure can help us grow for future projects, too. As the 99%<sup>6</sup> explains, "Ultimately, it's the ones who barrel through discomfort, are resilient in the face of failure, and master the last 30 percent of taking risk who reach the highest levels of performance." When a project doesn't deliver, take time with your team to do a retrospective to understand why, and then continuously improve upon your process. Hopefully, in our next report, we'll see projects with success rates through the roof. Hey, one can hope.

When a project or product isn't successful, what are **typical causes**? Mark all that apply.



## Success requires tight control of scope, expectations & schedule. Easy, right?

When a project isn't successful, there are usually several causes that cascade like dominos. A few misunderstandings, a lack of support or testing and issues with change management can quickly deteriorate any well intentioned development plan.

Three causes stand out from the pack as the most typical traits for failure: unrealistic schedules or expectations, missed or poorly defined requirements and scope creep.

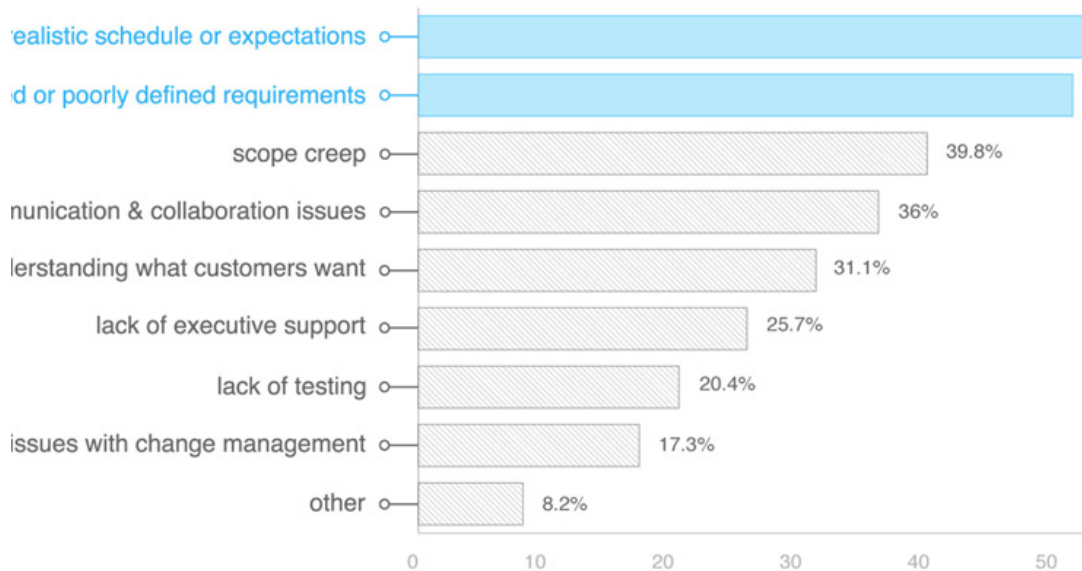
How do you avoid these havoc-wreakers? There's no magic

fix, but tools help and a well-defined process is important when you're up against the big three.

But, to really combat these negative influencers, highly skilled people are vital. A great tool or process can't help a project without the collaboration and work of a strong team and project manager.

**People matter. Interactions between PMs, team members & stakeholders can keep your project on track.**

Of these barriers to success, which frustrate you most? Mark all that apply.



## The fastest way to a headache is through poor requirements & schedule.

Check out Karl Wiegers' book [Software Requirements](#)<sup>7</sup> for advice on how to write good requirements.

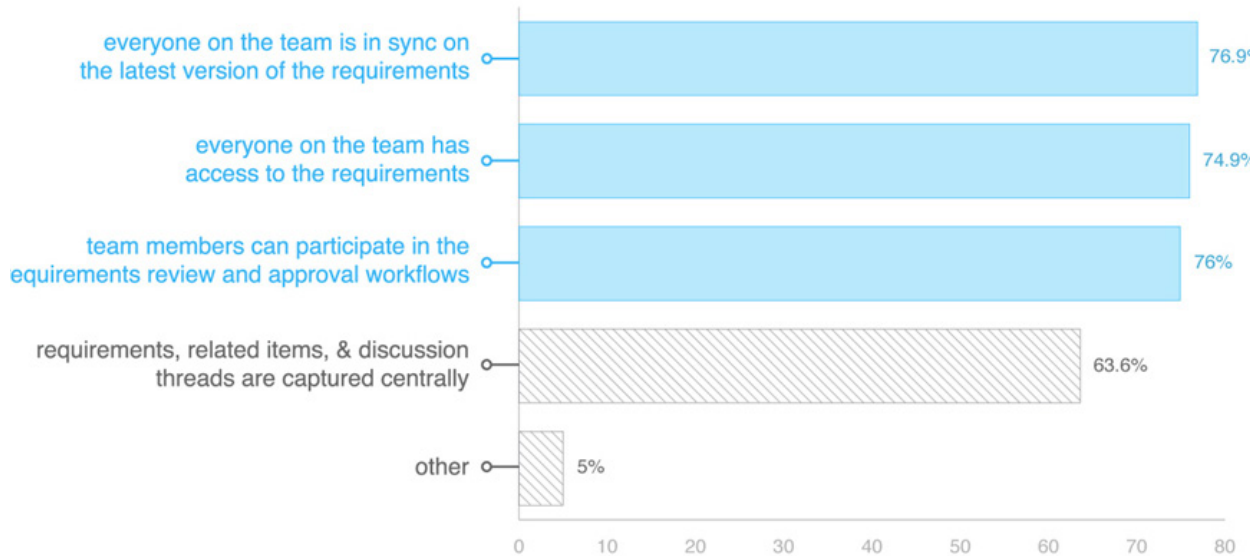
There's nothing more frustrating than a crazy schedule matched with poorly written requirements. It's an instant recipe for disaster. One survey participant commented, "How many times can I click 'Unrealistic schedules or expectations?'"

An unrealistic schedule or crazy expectations can mean your project doesn't deliver on-time or on-budget. Managing expectations is an integral piece of the project manager's job, so that the team and stakeholders understand what's

reasonable for project success. Once the project begins, it's difficult to rework those expectations.

Whether they're vague, missing or ambiguous, poorly written requirements can also destroy a good idea. Without a well defined set of requirements, how can the development team know if what they're coding and testing meets the needs of their customers? Clear requirements are key to keeping everyone in the loop on what's being built.

## The industry talks a lot about **collaboration**. How does collaboration apply to requirements management?



## Collaboration and requirements? They're like two peas in a pod.

*Collaboration* as a buzzword could rival *agile*, *innovation* or *social*. Getting beyond the hype, when applied to requirements management, what does it really mean? According to survey results, it's a three-way tie. To collaborate on requirements means everyone should be in sync on the latest versions, have access and be able to participate in reviews and approvals.

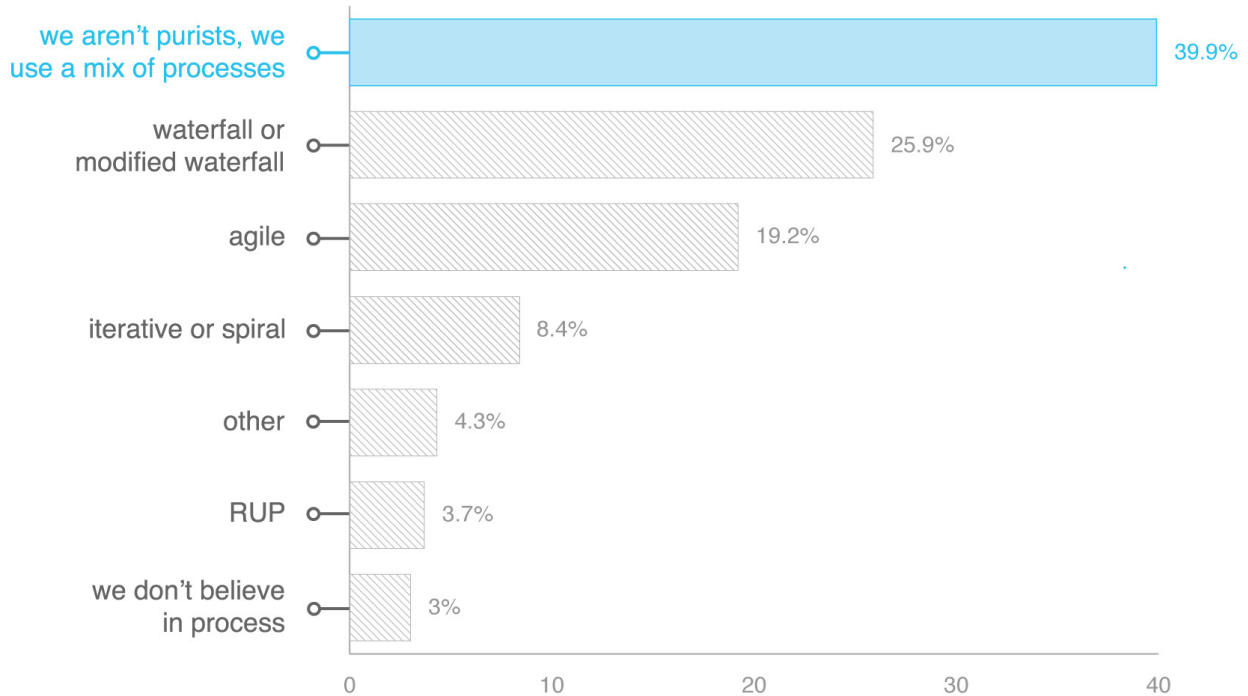
In software and product development, collaboration is essential.

As Gartner analysts<sup>8</sup> explain, "Interactions within development are important, but interactions with other stakeholders, particularly end users, project managers, and operations staff, all bear on results."

The McKinsey Quarterly Report<sup>9</sup> argues that organizations gaining market share through Web 2.0 do so, "in [McKinsey's] experience, by forging closer marketing relationships with customers and by involving them in customer support and product-development efforts."

Later, McKinsey continues, "The imperative for business leaders is clear: falling behind in creating internal and external networks could be a critical mistake." Collaboration isn't about adding noise or using social tools for social's sake. It's about connecting people together through these critical networks to make sure everyone is in sync, has access and participates.

## What software development process does your team use?



## There's no single perfect prescriptive process. Can you say, *WaterScrumFall*?

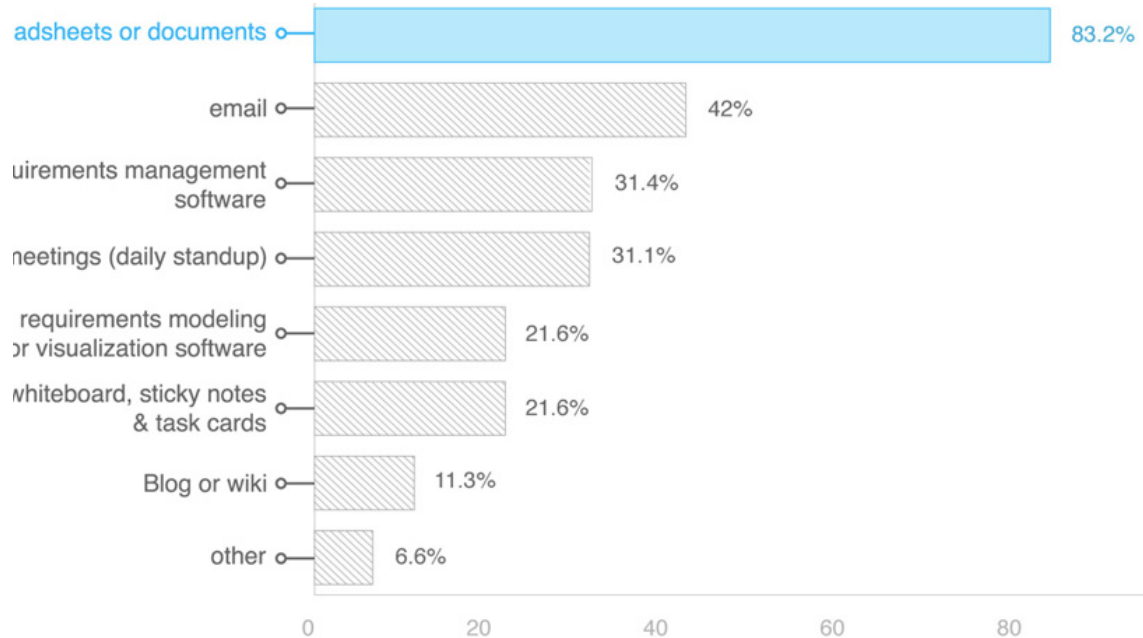
Agile grew more than **3x** since 2008, but the larger segment use a mix of processes.

Although agile continues to gain momentum, it's not the end-all, be-all for every project team or organization. Instead, the majority of teams use a hybrid, constantly evolving the process to best fit their project needs.

According to ESI International's Top 10 Project Management Trends for 2011<sup>10</sup>, project managers "will need to disabuse their stakeholders and executives of the expectations set by IT consultants, the media and the vendor community that Agile is the next 'silver bullet.'"

Gartner agrees that agile practitioners should integrate ALM for best results. In their Key Issues for Application Lifecycle Management they explain, "Projects deploying agile methods, geographically distributed projects — in which applications are built and maintained by teams working worldwide, and complex process and product development situations — all benefit from more-effective ALM." A hybrid process allows you the flexibility you need with the benefit of greater control.

How does your team currently **document and communicate** requirements? Mark all that apply.



## Oh, no – we’re still stuck in the land of static documents & spreadsheets!

We all know how to use Microsoft Word, Excel & email. They’re easy to adopt, so there’s no training necessary. However, should we be using the same tools to build complex software apps and embedded systems as our kids use to write their book report on dinosaurs?

These tools aren’t designed for traceability, coverage, or change control needed to manage requirements. Specification documents will always play a role in the RM process, but not as the vehicle

to manage them.

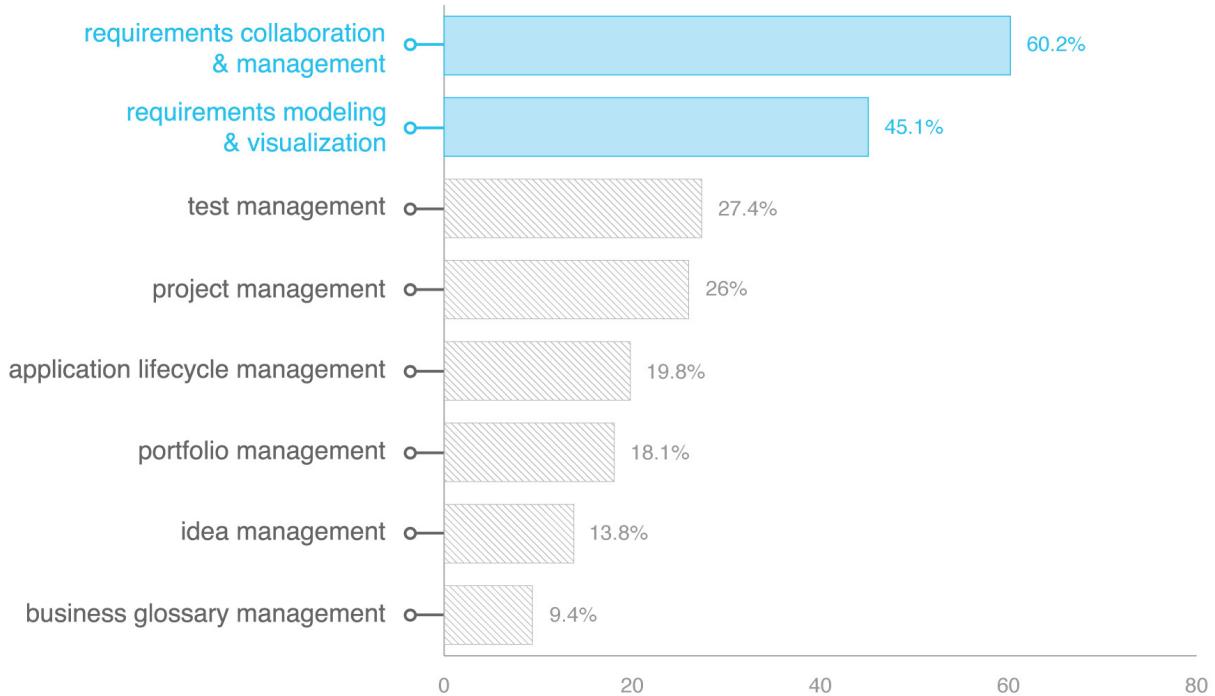
This survey data almost eerily relates to the data from the 2008 State of RM Report, in which 83% of respondents admitted to using documents and spreadsheets to communicate requirements.

According to the Gartner Report<sup>11</sup>, “As teams grow larger or have to deal with larger volumes of software, siloed paper-based practices for the management of each stage of development and operations are evolving to more-automated

interconnected processes.”

These requirements collaboration applications can transform your requirements and help you manage complex projects, all while retaining the flexibility and ease of use of simple spreadsheets and documents that your team needs.

What's on your team's shopping or **wish list** of software tools for 2011? Mark all that apply.



## New year, new tools. Today's complexity demands it.

With high complexity and failure rates, teams are adopting specialized software to help with requirements, specifically those providing collaboration and visualization. According to the survey, "requirements collaboration & management software" tops the must-have list of tools in 2011 at 60 percent, while "requirements modeling & visualization" comes in at 45 percent.

The Gartner Key Issues in ALM Report suggests, "Clients are seeking to identify the proper

fit for their organizations, and to minimize the risk and organizational impact of the tool adoption." Organizations don't need the hassle of a complicated application coupled with strenuous deployment – why bother? Our processes are always changing, so why subscribe to a tool's new way of organizing data? You should define your tool, not the other way around.

ESI's Top Ten PM Trends<sup>12</sup> is in agreement. They hypothesize, "In 2011, we will witness more effective use of social learning

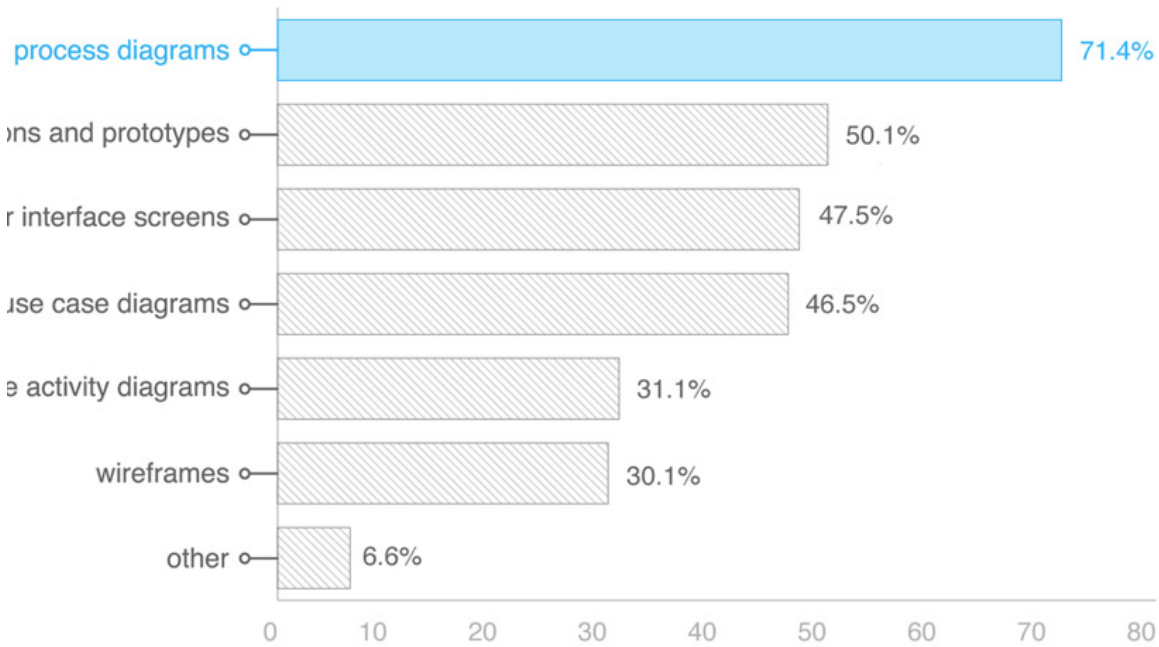
technologies and approaches." Collaboration will be key for innovation in 2011, especially when it comes to your tools.

**"We can't expect better results using the same old tools and ways of working."**

– Survey participant



In terms of visualization software, what types of **visual models** best clarify requirements? Mark all that apply.



## A picture is worth a thousand “shall” statements.

Process discovery through models can help you pursue new innovations.

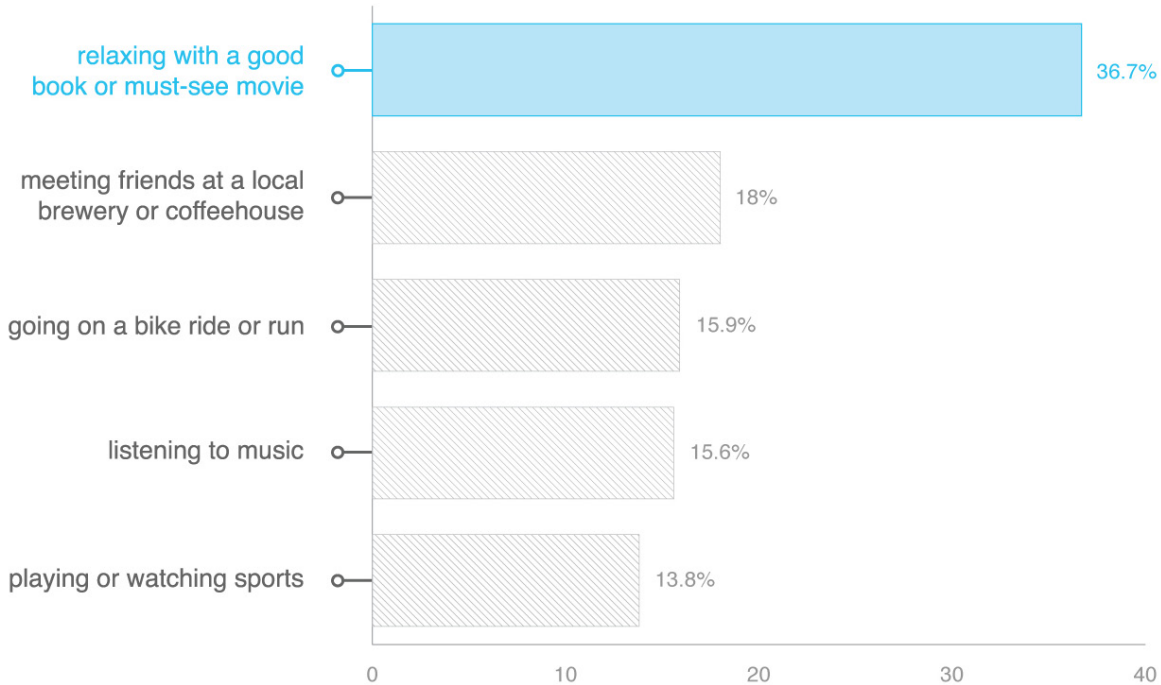
Business process diagrams hold the top spot as the visualization software to best communicate requirements.

Visualizations can support effective communication between analysts and business users, stakeholders and developers. A robust visualization or process model help validate requirements or eliminate errors or gaps in logic, and identify missing or incomplete requirements.

“Process discovery has become an important part of the project

lifecycle because you need to have a solid understanding of how things work today before making changes or pursuing new innovations,” said Susan Boers, president and CEO of Ravenflow. “Process models are one of the best ways to convey and validate that understanding.” It’s a critical first-step in determining how an application or product should perform.

## When you're not working on requirements projects, what's your favorite off-work activity?



## Sometimes, you just need to unplug, walk away and take a break.

We admit, this question is just for fun. It's here to remind us that the work we do is complex and will never reach perfection. There will be more data, another process du jour, another release to plan for version 3.1.2 because a software product is never finished. At the end of the day, a project succeeds or fails based on the people involved – you, your team, your stakeholders.

At times, managing requirements can feel thankless, unglamorous or

never-ending. But, don't forget that the work you do sits at the chewy chocolate center of innovation. Without good people working collaboratively, innovation doesn't happen; not consistently anyway. And as this report illustrates, requirements management plays an important role in being able to build better products on-time, on-budget and within scope. And, you manage requirements. Thus, you are invaluable to your organization. And, for that, you deserve a break. So, go relax with a good

book or movie, meet some friends at your favorite coffee shops and enjoy the journey. Cheers!

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## About the Author



### **John Simpson, VP of Marketing, Jama Software**

John represents the voice of the customer in Jama's product strategy and communications. He has over 16 years experience working at software and Web technology companies including Microsoft, WebTrends, Omniture and ZAAZ. He has contributed to several books, whitepapers and presentations on marketing and technology.

**Let us know your thoughts.** Did this report confirm what you already knew? What other things would you like to see in future surveys? Let us know, we're interested in your feedback. Send your thoughts to: John Simpson, [jsimpson@jamasoftware.com](mailto:jsimpson@jamasoftware.com).

## Jama Software

Jama Software is the leader in collaborative requirements management solutions for improving enterprise collaboration and managing complex software development projects. Its Web application, Jama Contour, helps organizations manage the entire requirements management lifecycle through an intuitive, easy-to-use interface that brings people, process and data together to ensure software quality is delivered as specified.

Customers, from agile start-ups to the largest and most sophisticated technology and IT organizations in the world, turn to Jama to help drive innovation, improve the decision-making process and harness the collective genius of all stakeholders involved in building great software.

For more information please visit: <http://www.jamasoftware.com>.

## Ravenflow

Ravenflow is a leading provider of process visualization and requirements definition software that allows companies to gain better insight, clarity, and quality in their process improvement and application development projects. Leveraging a patented natural language engine, Ravenflow helps companies analyze and visualize their business processes, application requirements, and system engineering needs. Ravenflow received the 2010 IBM Jazz Innovator Finalist Award, the 2009 Jolt Productivity Award, 2009 IBM Rational ISV Partner of the Year Award, and was selected as a Gartner "Cool Vendor in Application Development." For more information, please visit [www.ravenflow.com](http://www.ravenflow.com).