THE PRODUCT MANAGEMENT AND MARKETING AUTHORITY

PRAGMATIC MARKETER

SUMMER 2017

MY DAUGHTER ELLIE RECENTLY STARTED SECOND GRADE. Let me tell you, nothing makes it more obvious exactly how much of what you learned you've forgotten than trying to help your kid with their homework.

It has become blatantly clear that my ability to remember something is directly proportional to the frequency with which I use that skill (alas, this does not bode well for her high school years when I'll have to help her with calculus).

But this doesn't hold true only for the core subjects we learned in elementary school. When it comes to our careers, we can't treat critical skills as something we learn once and are then done with. We've got to treat them like muscles that must be continually worked; ideas that must be brought out, poked at and reexamined on a regular basis.

If we really want to succeed, we must be perpetual students who strive not only to regularly learn new concepts and theories, but also to continually refresh the topics that matter most—understanding our markets and ensuring that everything we do addresses their problems.

And that's why in this issue of *Pragmatic Marketer* we're reexamining some core subjects (pricing, messaging, prioritization) and some newer ones (UX and IoT, for instance) to make sure you're armed with everything you need to move to the head of the class.

Happy reading,

Rebecca Kalogeris
Editorial Director
editor@pragmaticmarketing.com

PRAGMATIC MARKETER

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Pragmatic Marketer™
8910 E. Raintree Drive, Scottsdale, AZ 85260

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FEATURES

DEPARTMENTS

WHY AN Ancient Philosopher Would Make the Perfect Product Manager

BY JOE DANIELS

HANDS UP, WHO'S HEARD OF EPICTETUS?

For those who haven't (and don't worry, I hadn't until recently), let me explain a bit about this ancient Greek fellow and why he'd make the perfect product manager.

Let's start with a quote from Epictetus: "We have two ears and one mouth so that we can listen twice as much as we speak."

If you're in product, you should consider having this tattooed somewhere on your body, preferably somewhere you can constantly read it. It's a staggeringly useful piece of advice. Here's why.

LISTEN ONCE, LISTEN TWICE

Let's start with the whole two ears thing. Unless you're a Postimpressionist painter from Holland, you likely have two ears of your own. And you probably use those ears to hear whatever is going on around you. But hearing doesn't equate to listening. There's a subtle difference.

Your job is to create the best possible product you can. And one way you can work out which features to build is by using customer feedback. The problem is that a lot of people hear their customer feedback but don't listen to it.

> "We have two ears and one mouth so that we can listen twice as much as we speak."

Hearing is passive. It goes in one ear and out of the other. You know the feedback exists, and you know what people are saying, but you don't know what that means.

Listening is active. It goes in one ear, is processed in that gray goo inside your skull, and then is acted upon. If you truly listen to customer feedback, you'll begin to understand *why* your customers want what they want, and you can use this to your advantage.

You have to listen once to know the what, and then listen again to know the why. Only then will you have the knowledge you need to act on your customer feedback and make informed decisions when it comes to product development and choosing which features to focus on.

SPEAK TO ME!

Now that I've established you have two ears and need to use them to listen to your customers, I've got another shocking revelation.

You have a mouth. That's right, I went there. The issue is that a lot of product professionals—in fact, a lot of people in general—use their mouths too much. They talk and talk and talk until talk no longer seems like a real word.

My point is that simply spouting words doesn't make you

good at your job. It makes your job harder. And makes you seem a little foolish.

Of course, the simple solution is to talk less. If you start listening more, talking less is pretty darn easy. But that doesn't mean you should zip up your mouth entirely.

You still need to communicate the knowledge you've gained through listening back to your team and your company. And once you've started working on great new features, you have to tell your customers what's going on. They want to know. So it's okay to talk a bit.

THE GOLDEN RATIO

Epictetus would make the perfect product manager because he knew that we should listen twice as much as we speak.

Unfortunately, the uncomfortable truth is that a lot of people in product do the opposite: They speak twice as much as they listen. This leads to ill-informed decisions and guesswork, and further down the line, it leads to a product that doesn't deliver what customers really want. So, to everyone out there, a quick word of advice, first formed thousands of years ago and now channeled through my mortal lips: "We have two ears and one mouth so that we can listen twice as much as we speak."

Listen once, listen twice, and then you can speak to me. PM

About the Author

Joe Daniels is the content strategist at Receptive.io, writing about customer feedback, product management, SaaS and how they all connect. You can email him at joe@receptive.io and find him on LinkedIn at linkedin.com/in/joeisawriter or on Twitter @receptivejoe. You can also read more of his work at receptive.io.

Any suggestions on how to launch a new product to our channel partners?

Dave Daniels, Instructor
Pragmatic Marketing

TO BEGIN, YOU WILL NEED INPUT from your channel partners about the market segments they serve. You want their help in establishing launch goals and identifying which parts of the segment would help them—and you—achieve the launch goals fastest. This pulls them into the planning process in an area where you value their expertise and where they can contribute. By helping them to achieve their goals, you will achieve yours.

If you find you have a large number of channel partners, or there are conflicting launch goals, you will need to prioritize those partners. It's common for 20 percent of your channel partners to generate 80 percent of channel revenue. Initially, I'd focus on those 20 percent players, expanding as time and resources allow. Expect some horse trading here, but be sure to focus on the bigger picture of the overall success, not just channel-partner success.

Focus on the bigger picture of overall success, not just channel-partner success.

As a parting thought, you may discover that—for now—it's not a good use of resources to focus on channel partners. At the beginning, it may be better to focus all your launch resources within your organization, and then include channel partners as a second launch phase. This approach can be helpful if the channel is resistant to change. Once you generate excitement within your own organization, you will attract those hesitant channel partners back to you.

Do you have a question for our experts? *Send us an email at experts@pragmaticmarketing.com.*

TRAVEL TIPS FOR ROAD WARRIORS

Beguiling Boston

Founded in 1630 by Puritan settlers, Boston is a city steeped in history, one of the oldest in the United States. It earned its name from the many early settlers who hailed from Boston, England. Colonial sailors and traders coined its nickname "Beantown" when they encountered the regional dish of beans baked in molasses.

Faneuil Hall Marketplace | faneuilhallmarketplace.com
A marketplace and meeting hall since 1743, Faneuil Hall was the site of several speeches by Samuel Adams and other revolutionaries. Over time, the marketplace has expanded to include more than 100 shops and restaurants.

Boston Public Garden | boston.gov/parks/public-garden
Established in 1837, the Frederick Law Olmsted-designed park was the first public botanical garden in America and is a favorite place to stroll year-round. Look for the "Make Way for Ducklings" statue, the garden's most famous landmark. Inspired by Robert McCluskey's famous children's book, the sculpture was created in 1987 by Nancy Schön to celebrate the garden's 150th anniversary.

The Paul Revere House | paulreverehouse.org
The oldest building in downtown Boston, Paul Revere's home offers a glimpse into middle-class life during the 18th century.

Boston Common | boston.gov/parks/boston-common
The nation's oldest city park, Boston Common was purchased by the city's citizens in 1634 and set aside as "common" land by vote in 1640. Originally used as a military training ground and place to graze cattle, today the common is a pastoral oasis where city dwellers and tourists can escape the surrounding urban landscape.

Museum of Fine Arts | mfa.org
One of the oldest art institutions in the country, the museum is home to one of the best art collections in the world. Be sure to check out the Art of Americas wing, open since 2010, which encompasses four levels of American art, ranging from ancient to modern.

Boston Tea Party Ships & Museum
bostonteapartyship.com/museum
Relive the Boston Tea Party—one of the defining events that changed the course of American history—with historical interpreters, interactive exhibits and two full-scale restored 18th century merchant vessels. You can even channel the original Sons of Liberty and throw tea into the harbor.

John F. Kennedy Presidential Library | jfklibrary.org
Dedicated to the 35th President of the United States, the library features a recreation of the sights and sounds of the 1960 Democratic Convention and a reproduction of the Chicago television studio where the first debate between Kennedy and Richard Nixon was held. Look for the Mercury MR-3 Freedom 7 space capsule at the centerpiece of an exhibit commemorating Kennedy's role in establishing the U.S. space program.

Freedom Trail | thefreedomtrail.org
Walk along this 2.5-mile, red-lined route to see 16 of the city's most historic sites.

Yankee Lobster Company | yankeelobstercompany.com
If you want fresh, affordable seafood, don't miss the Yankee Lobster Company. This decades-old lobster wholesaler includes a retail arm where you can grab a bowl of clam chowder and freshly caught lobster. If you won't be in Boston anytime soon, you can schedule a seafood delivery anywhere in the continental United States.

Fenway Park | boston.redsox.mlb.com/bos/ballpark
The oldest of old-style baseball parks has been home to the Boston Red Sox since 1912. Even if you don't visit during baseball season, you can still tour the park year-round regardless of rain, snow or sunshine.

TRAINING THAT DELIVERS RESULTS

Results compiled from 2017 TechValidate survey of 1173 Pragmatic Marketing customers ▶

Improvement in customer satisfaction/NPS by

50+%

48% of organizations surveyed

Reduced amount of costly rework by

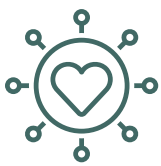
50+%

42% of organizations surveyed

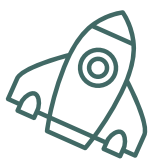
CLUB 25

60+% of organizations surveyed

INCREASED PRODUCT SALES
BY 25+%



IMPROVED PRODUCT/ FEATURE USAGE
BY 25+%



REDUCED TIME TO MARKET
BY 25+%

More than half of organizations surveyed increased confidence in their roadmaps

IMPROVED ROADMAPS

55%

Clearer Roles and Responsibilities

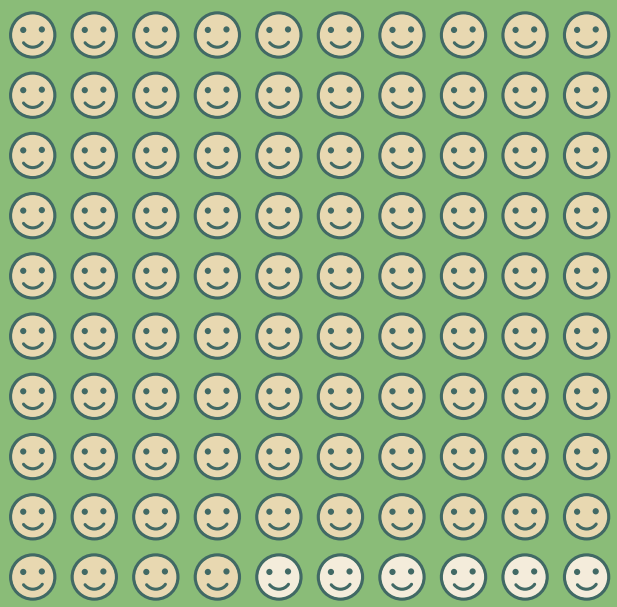
83%

have gained a better understanding of product roles within their organization

Team Alignment

61%

improved alignment with internal teams



Satisfied Customers

94%

are likely to recommend Pragmatic Marketing

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WHAT COULD GO WRONG

Building for the International Market

A WELL-KNOWN MESSAGING APP RECENTLY LAUNCHED IN A NEW INTERNATIONAL MARKET and ran into some problems they couldn't quite pinpoint. A subset of users was reporting something impossible: upside-down photos. The developers checked and rechecked to confirm that it was not a coding error.

What they didn't know was that a certain data network in the new market caused the upside-down photos, because of the way the data was formatted and transmitted. There was no way to find this out without having people in the country test the app, an expensive endeavor for a company with no local office.

Working in international markets is tough, but globalization is a reality you cannot afford to ignore. For many organizations, the decision to internationalize falls into one of two categories: defensive or offensive growth. Defensive growth comes from the desire to learn more about why your product is not growing enough in an existing area. Offensive growth is all about setting a company strategy to own or control a market. These approaches will influence the decisions you make, dictate the challenges you face, and ultimately determine whether a market is worth entering or not.

If the market is worth enough to you, then you should focus on putting the required effort and work into that market. Learn the cultural context you might not be aware of. For example, certain countries dislike using drop-down menus; their presence can significantly impact sign-up rates. And in some countries, people do not have last names. If your product requires using last names, how will that impact your sign-up rates? You can only answer these questions, and more, by gathering local insights. Make sure you have a plan to get these insights and incorporate them into your product from the get-go.

INFRASTRUCTURE

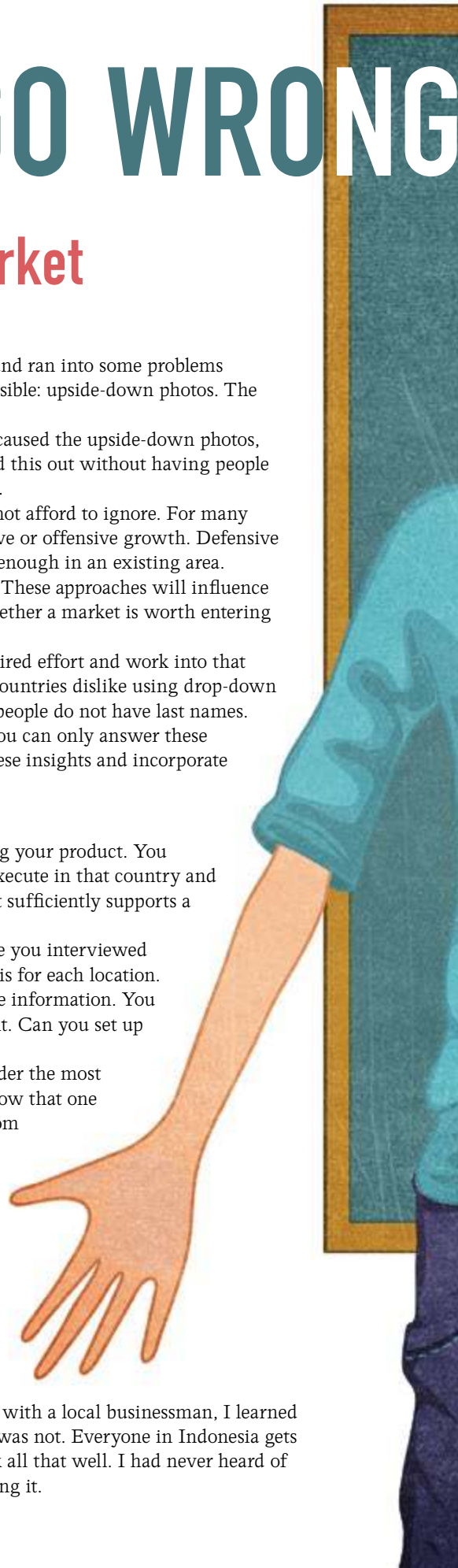
Infrastructure is an incredibly complicated subject when it comes to internationalizing your product. You must consider infrastructure from two angles: your company's ability to support or execute in that country and the actual physical infrastructure limitations. Can your company build a product that sufficiently supports a different language or accepts different inputs?

Support infrastructure includes the ability to work directly with users. Much like you interviewed users and potential customers when you built your initial application, you must do this for each location. Knowledge of the local market from the people who live there will provide invaluable information. You can—and should—use this information to develop the features that local people want. Can you set up that kind of infrastructure for your company?

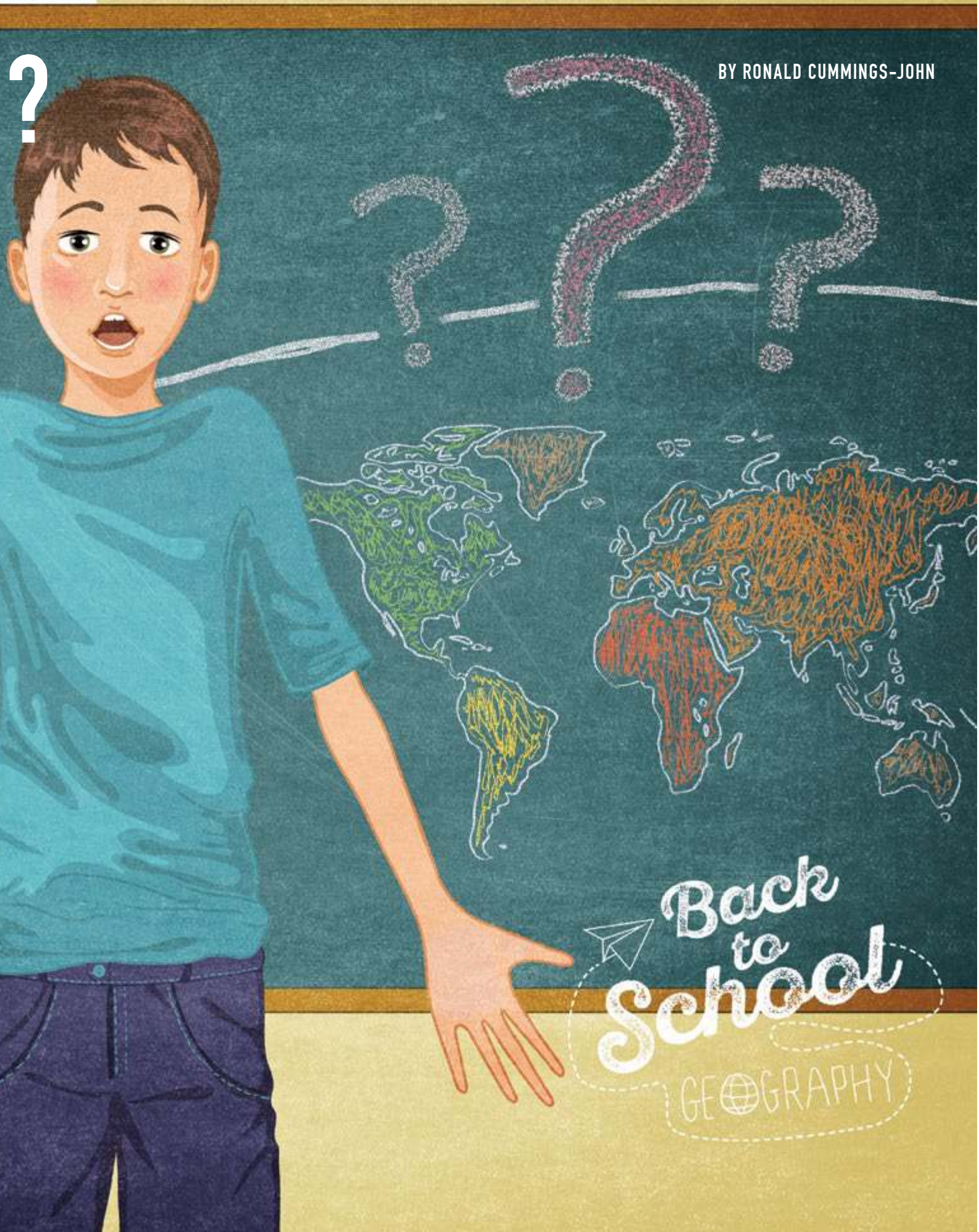
When you think about a country's physical infrastructure, you should also consider the most common devices and networks in use. In Myanmar, for example, it's important to know that one of two font packages could be installed on a phone. Because Myanmar was cut off from the greater internet for a long time, it developed its own approach to font rendering (Zawgyi) that is incompatible with the rest of the world (Unicode). If the device was imported from China—a common occurrence—Burmese residents might need to have their font pack loaded by a third party, which could affect the UI. You will only discover small nuances like this if you're in the actual country on real devices with real users. Emulation won't cut it.

FINDING LOCAL INSIGHTS

I am accustomed to getting around London and most other international cities the same way everyone else does these days: Uber. But when I visited Indonesia to do some testing with a major social-media app, I couldn't use my Uber app. Every ride I tried to book got canceled, or else the app crashed. When I struck up a conversation with a local businessman, I learned that Uber was illegal in Indonesia at the time, but Go-Jek, a motorcycle taxi service, was not. Everyone in Indonesia gets around on mopeds and motorcycles, so a car service like Uber just isn't going to work all that well. I had never heard of Go-Jek, but this little company was entrenched enough to prevent Uber from unseating it.



BY RONALD CUMMINGS-JOHN



A crucial thing to understand about internationalization is the local context of your app. Cultural norms and the ways that the local competitors have established themselves will dictate your ability to penetrate the local market. Local competitors are difficult to challenge. But you can study and analyze them to understand how to build an app the local market wants and make better decisions about growth.

Facebook is a good example of adapting a product to work for the accessibility levels of the end user. Facebook created Facebook Lite, a version that consumes less data, for use in 2G and 3G environments. Unfortunately, not everyone has the luxury to build two separate code bases. But everyone can consider how the quality of 2G/3G/4G, devices and power availability will affect usability and the user experience.

TRANSLATION ISN'T ENOUGH

For many product teams, launching internationally is merely a matter of conducting a quick translation job. Unfortunately, this leaves a trail of destruction and devastation. Well, perhaps it isn't that bad, but growth numbers are often weak and the launch is widely considered a dud. There are many reasons why translation isn't enough, but they boil down to language context barriers and UI/UX concerns.

For example, a well-known food-delivery service asked for help with its app in a specific market. Growth in that market was especially weak, even though they had spent a lot of money getting their translation just right. Unfortunately, no one had noticed that "driver" had been incorrectly translated from English to "chauffeur." And users in this market were not interested in what they perceived as an expensive food-delivery service that used chauffeurs.

There are other examples where long strings have broken the UI in a product because the original design called for a certain number of characters. The word "start" in German (*Anfang*) has a character count of six, which either could be a small fix or break the UI. But, when we look at the Spanish equivalent (*comienzo*), we find that there are eight characters, which could severely break the UI. Be prepared: You may have to redesign your UI or design an entirely different UI to ensure that it is responsive for the markets you enter.

INTERNATIONALIZING AND LOCALIZING

Nothing beats getting on a plane and interviewing people in the local market. Asking questions and understanding their needs is paramount for companies looking at growth. Unfortunately, this gets expensive fast.

An alternative is to do the same thing with local friends and family in the desired location. There are some pitfalls with this because, typically, friends and family are not testers. They may miss key insights and advice. You don't know what you don't know, but when you use friends and family who aren't accustomed to testing, they don't know what they know because their common knowledge isn't an insight for them. What they consider normal, say not having a surname, may never surface.

The advantage of using trained local testers is that they understand local use cases. Not only can they help you identify localized bugs on local devices, they may uncover subtle UX/UI suggestions from local people as well. You can either engage a testing team on your own, or work with a company like Global App Testing, to locate crowdsourced testers. Whichever option you choose, make sure that the teams you engage have experience doing this kind of work.

WHEN TO SAY NO

There is no point in doing localization and internationalization work unless there is a strategic benefit. Ask yourself, "Is this market worth enough to me?" If it's not, don't do it. If you're not willing to put in the time and effort it takes to learn about a local market, why would you expect people in that market to put the time and effort into your product? To get into the local environment, you need to send real people there. You can do that with your internal teams (expensive) or leverage friends and family there (unreliable), but neither option is ideal.

Launching internationally requires having an ability to build from the local perspective, go beyond translation and understand the limitations you might face. If you do your research, you can gain the insight you need to build a compelling experience for your newfound users. PM

About the Author

Ronald Cummings-John is the author of the definitive book on testing, *QAOps Testing in a DevOps World: Continuous Testing Strategies When Frequent Software Delivery Matters* (qaops.com). His passion for QA has sent him around the world working with the top QA and product teams from companies such as Facebook, Microsoft, King.com, Spotify, Dropbox and many more. Ronald founded Testathons, a hackathon for testers, and is also the co-founder of Global App Testing, one of the fastest-growing technology companies in the UK. Connect with Ronald on LinkedIn: linkedin.com/in/ronaldcj.

THE ABCs of UX AND DESIGN

Back to School Art

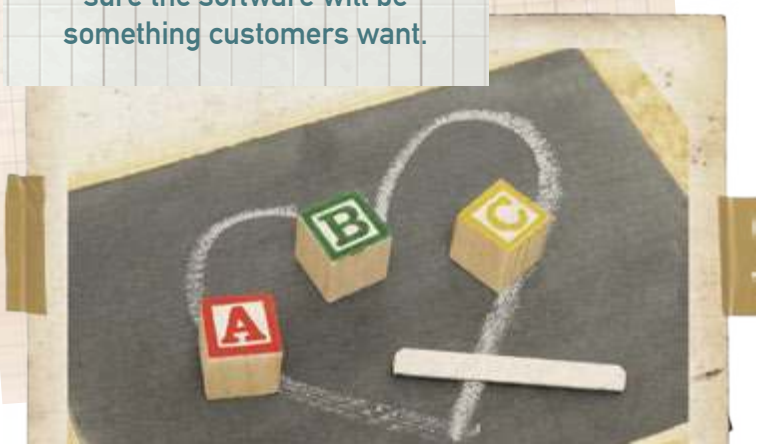
BY PETER HUGHES

IN TODAY'S PRODUCT WORLD, IT'S PRACTICALLY IMPOSSIBLE not to be aware of terms like UX, lean, agile, scrum, MVP, user research and design thinking. This is because products of all stripes increasingly rely on software to enable customers to configure and operate them. And often, this software comes in the form of a website or mobile app.

Creating software your customers value, love using and want to buy takes work. You have only to look at your own smartphone to see plenty of apps that you've abandoned. You downloaded them because you thought they'd be useful, only to be disappointed. And, like most people, I'm sure there's software you grumble about using at work or home.

The world of design has its own jargon and practices, which can be confusing if it's not part of your background. The goal of this article is not to turn you into a designer; instead, it's to help you make smarter decisions and have more informed interactions with your design and software teams because you'll have a better idea of what they do and how they work.

The main goal of UX is to make sure the software will be something customers want.



Along the way I hope to:

- Help demystify common jargon
- Put that jargon into context
- Explain how the key components fit together and when they're used
- Provide a starting point for learning more

Armed with this knowledge, you'll be on your way to building better products. Your customers will have an excellent user experience and your business will see benefits too, including taking products to market faster, building software at a lower cost and ultimately reaching profitability more quickly.

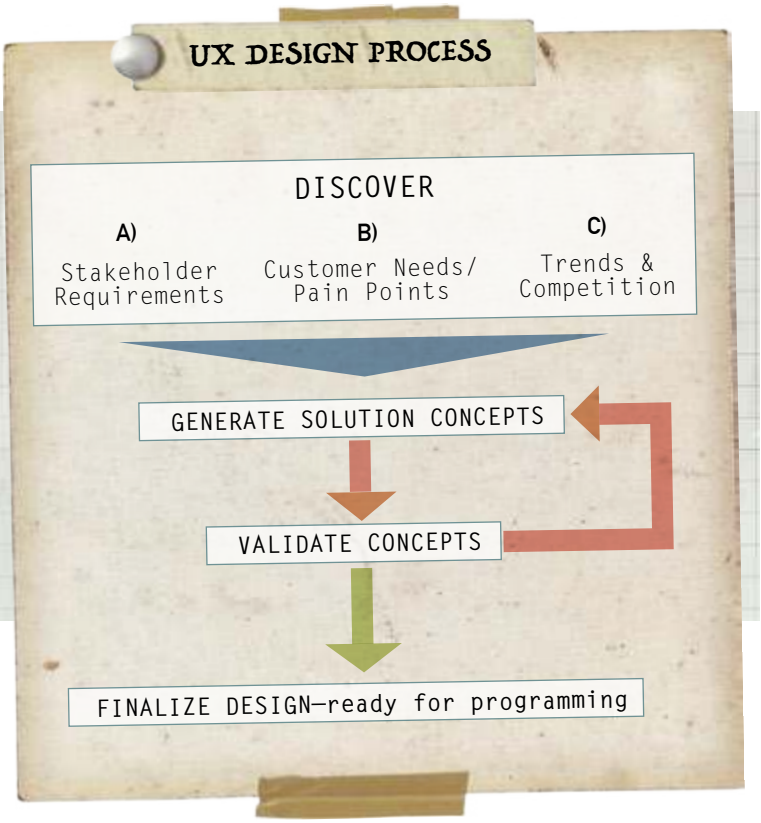
WHAT IS UX?

UX stands for user experience and is used to describe the process for designing products based on end-user needs, whether those users are paying customers or people who work in your company. I refer to these end users as customers, as it helps us stay focused on the fact that they are real people and the lifeblood of any business. We need to pay them special attention.

The main goal of UX is to make sure the software you spend time and money building will be something customers want and will pay for. At a high level, the UX design process includes four main areas:

1. Discover and understand what your customers struggle with and the business/market environment
2. Generate design concepts that address customer needs
3. Validate that your concepts hit the mark for customers
4. Finalize design for handover to the programming team

The UX process starts with building a clear understanding of your stakeholders' requirements, which includes your business goals, your customers' needs and pain points, and market trends and conditions. Depending on the size and structure of your organization, execution of this will be undertaken by either a product manager, members of the design team or some combination. The important thing to keep in mind is that this process creates a framework that can be utilized to document and validate assumptions based on direct customer feedback.



From here your designers will begin creating wireframes, bare-bones design concepts for the software. Wireframes are a collection of screen images or basic interactive models (prototypes) that convey how key pages will be structured (placement of images, graphics, text, etc.) and illustrate how customers will be able to execute the main functionality.

In parallel to the wireframe development, the look and feel of the software (the visual design) will also be created. In the later stages of the UX process, the visual design will be merged with the wireframes to provide a strong sense of how the software will actually look.

The wireframes will be usability tested with your customers to ensure they are progressing in the right direction, and the test results will help the design team refine their ideas as needed. When the wireframes have been successfully validated, they are finalized and documented in a user interface (UI) specification. The programming team takes over from here. Based on the finalized designs, they'll create the software that your customers will use.

Now let's look in more detail at what happens in the various steps described above.

STEP 1. DISCOVERY

The key activities in *discovery* are about understanding and documenting the factors that can influence what your software will do. There will be requirements from your internal stakeholders and from the external customers you're building your software for that will need to be discovered.

Understanding Stakeholder Requirements

Often, many parties have an influence on your software product. Your design team will need to understand all stakeholder requirements. These can include such things as marketing and sales goals, budgets, launch dates, timing requirements, engineering constraints, logistics and sign-off processes. This information is typically gathered through a series of meetings with the relevant parties.

Understanding Customer Needs and Pain Points

User research is a vital part of the UX process and forms the foundation of the design work to follow. The goal is for immersion in your customers' environment; this could be at their home, at work or any other place they may use your product. For example, if you have a B2B product, designers would spend time with customers to get a sense of when and where they work and the main tasks they have to complete. And since customers rarely use a software product in isolation, if you already have a product in the market, you will want to understand what customers use your current product for and the ecosystem it fits into.

In an ideal world with unlimited time in a day, UX and product management would be combined. This is sometimes true in smaller organizations (though it often means one side is shortchanged) but is rare in larger projects. While the product manager has similar goals to the UX designer in terms of wanting to understand the world from the customer's perspective, as a practical matter a division of labor is often required. For one, product managers often have their hands full with day-to-day issues that occur when dealing with other parts of the organization, such as marketing, sales and engineering. Their research needs are generally focused on understanding user problems. The UX designer needs a deeper look into customer workflows and the end-to-end experience. As such, the UX designer generally performs this type of research. But regardless of how or if the work is divided, both sides will pay critical attention to the results of the user research.

You'll sometimes hear designers talk about understanding customers' mental models. This is another way of saying that they are trying to learn how customers think about their world and how they respond to it. Immersion helps designers develop empathy for customers as they start to uncover customer pain points and what's important to them. This firsthand knowledge is extremely valuable, as it enables your design team to work from a position of fact and not assumption.

The process of spending time with customers is called contextual inquiry. One of the reasons this is such an important activity is that people often can't remember all the activities they perform in their work.

You can miss valuable information if you don't observe your customers. Watch as they complete core tasks and chime in with questions when they appear to get bogged down or

frustrated, or if they do something unexpected. This helps identify nuances that might otherwise be missed if you only relied on conversations, surveys or third-party feedback from sales.

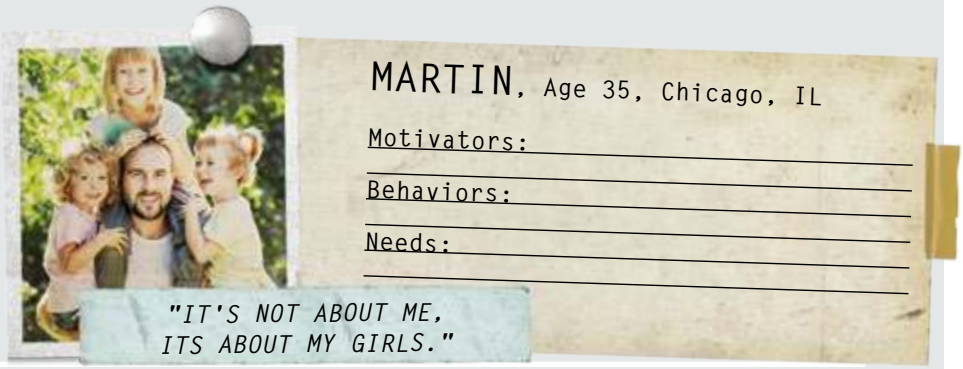
For example, on a project where my client was developing a book production-management system, I shadowed a book editor as she used her company's system. She suddenly stopped in the middle of a task and pulled a piece of paper from a drawer. It was a cheat sheet that contained a list of codes she often used but could never remember. Without her list, she would have to log into another system to obtain the codes. Because she was "just doing her job," she didn't have to think about the steps she needed to complete. And, as she told me, "It wouldn't have occurred to me to say anything about my list if you'd asked me to describe what I do; I didn't think it was important enough to mention."

Analyzing Discoveries

Once you collect observations from five to 20 customers (depending on the time, budget and complexity of the situations studied), the next step is to analyze the data. There is no single right way to do this, but the goal is to identify common themes that your customers experience, the situations they are in when they use your product, and what they want to do as a result of using your product. This information will inform the design process and let you know whether the assumptions your team had about your customers apply in the real world.

Designers use a variety of techniques to help summarize and visualize what they have observed:

Personas are fictitious people based on the themes captured from market interviews and observations. The most important information they communicate are the customers' goals, their motivations and pain points, common tasks they perform, their needs (or things to avoid) and any relevant details about their backgrounds.



Journey maps are visual timelines that detail the interactions between customers and your organization. They show when these interactions occur, who's involved, what actions are taken, and the key documents used or systems referenced. They will often include key questions your customers have and/or their feelings at various points in the journey.

Scenarios briefly describe situations where customers need to get a task done. Scenarios include details about the environment and any constraints, issues or information that must be considered, and the outcome they're looking for or want to improve. In many cases, you might identify five to 10 scenarios that your software could address. These scenarios must be prioritized and will act as a reference point that your design team can revisit to ensure that the design solutions they create stay faithful to customers' needs.

Here's an example of a scenario for a company that makes sales-management software:

"Bob manages a team of eight salespeople. They sell a variety of specialized robotic production equipment. There are 10 product lines, each consisting of about 400 physical items. There are also five types of service agreements. Each salesperson has been assigned a territory so that among them they cover the United States and Canada. All inquiries are entered in the customer contact system. Sales are recorded in a separate sales system that also tracks product inventory.

Each month, Bob must enter both systems to compile a report showing which products generate the most interest, as well as sales summaries for the various product lines and territories. The sales-reporting system doesn't have an export function, so he must manually copy and paste data into a spreadsheet he's created based on what he needs to present to his boss at their management meetings. This is one of Bob's least favorite tasks; he hasn't found a way of making it easy to do. He feels he wastes a lot of time that could be spent working with his team."

STEP 2. GENERATE SOLUTION CONCEPTS

DEFINING FEATURES AND FUNCTIONALITY

Once the design team has developed a strong sense of what the target customers' worlds look like, they can use their research to list the main feature and functions needed to generate the outcomes described in the scenarios.

Affinity Diagramming

Have you seen pictures of designers with a wall full of Post-it notes and wondered what they were doing? It's called affinity diagramming, and it's a great and extremely flexible way to organize your thoughts. Start by writing each option or idea on separate Post-its and place them on a large open surface. Then rearrange them into related groups and name them accordingly. Designers often use this to identify themes from their research observations.

Wireframing/Prototyping

When there's agreement on the main functionality to be implemented, your UX designers can start to create wireframes or prototype screens that show how your customers will use your software to complete tasks. You can convey a strong sense of the ideas being considered and of task flows with simple sketches.

The aim is to show key elements such as the main navigation/menu options, and the items likely to make up individual screens, including images, links, buttons and the types of information to be displayed. Organizing and prioritizing information, whether it is for the entire software product or for particular screens, is the job of the information architect. For large projects, a specialist may perform this task. However, for many smaller projects this work will be handled by your UX designer.

It's common for UX designers to come up with several ideas for task flows, and how information might be laid out. If this happens, usability tests can be leveraged to determine which approach, if any, your customers prefer to use. The feedback that's generated can be used to refine the designs as your knowledge about your customers develops.

Visual Design

Your graphic design team will work on the visual feel of the software by determining color schemes and elements such as imagery, graphics, fonts, borders, button styling and backgrounds. Their goal is to ensure your software conveys your company's branding, and that there is a consistent look to your product. At a minimum, a basic style guide will be produced that shows at least a few representative screens that contain the key elements that will used. All of the graphic details are called out and specified so that as new pages are developed they are graphically consistent.

Gradually, the interface will become progressively high-res as it matures, meaning that the screens will look increasingly like the final product as the visual design is merged with the underlying foundation.

STEP 3. VALIDATION

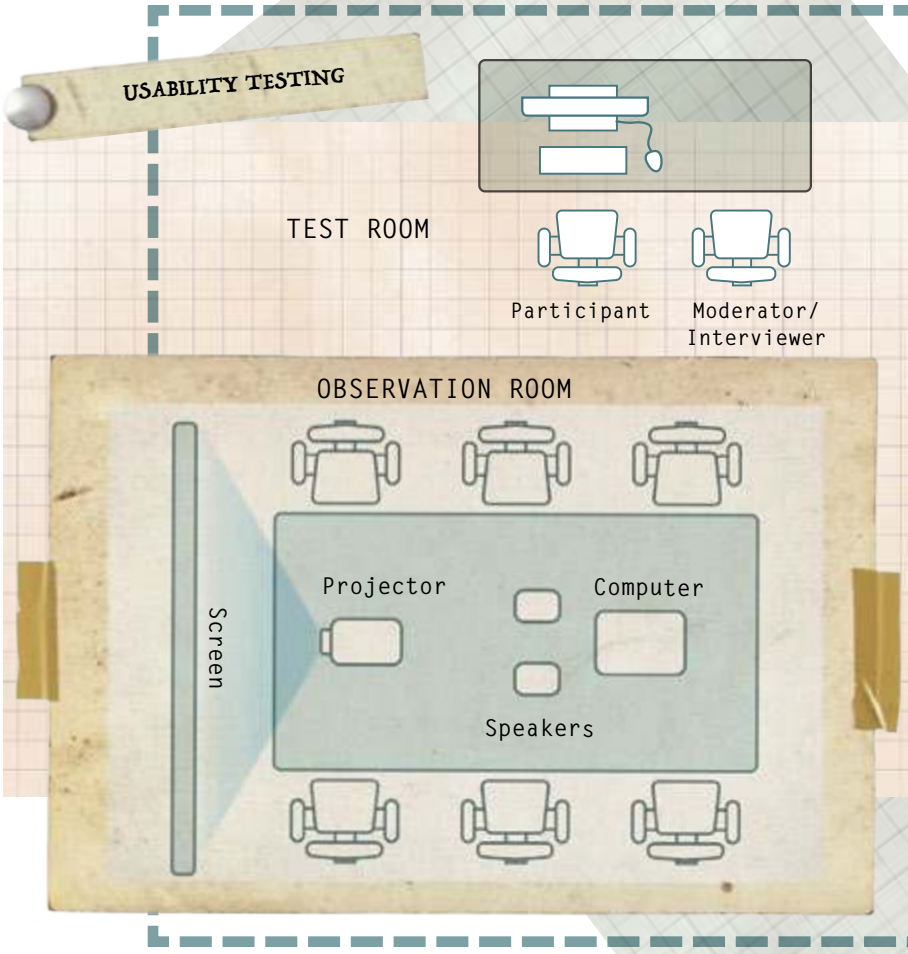
Usability Testing

User research is the collection of activities that allow you to understand who your customers are and the world they live in. But as the design process develops, the research you do changes focus. Usability testing is a research technique used to determine whether your design concepts deliver effective solutions to customer problems; it's about the value they find in your product. These tests are also used to determine the ease of use of your product. Note the order here: Value must come first. Without it, ease of use is moot.

Testing is an important step that is too often overlooked. Until you conduct effective usability tests to check in with your customers, you'll be creating your software "blind." Conducting two or three rounds of usability testing during the design phase is key. Tests that are planned well ahead of time have little impact on schedules and can be performed inexpensively. There's little reason not to conduct them, given what they can reveal.

What Is a Usability Test?

There are many types of usability tests, but the one-on-one test is the most common. The one-on-one usability test gets its name because one customer at a time (and remember, they're the only one whose opinion counts) is interviewed by a moderator, who also manages the test. The moderator provides the test participant (customer) a series of realistic tasks or scenarios and then asks the customer to carry them out using your product.



Setting Up a Usability Test

When you set up a usability test, the first thing your design team will do is create goals for the first phase. Goals detail what you will test and why, and are based on your earlier user research. Effective goal statements will often include a specific outcome based on the importance of the goal. For example, all participants must be able to successfully complete the checkout process within 60 seconds. This approach has several advantages. First, it helps keep test activities focused. The test won't be cluttered with questions that are unrelated to your goals. Second, your design team will know whether it has achieved the stated goals, which helps identify where further work may be needed.

Usability testing is used to determine whether your design concepts deliver effective solutions to customer problems.

The test plan will include:

- Test goals
- Features or functions to be tested
- The customer types or segments you plan to test (e.g., experienced vs. novice)
- Where and when the test will occur
- Key sign-off dates for finalizing decisions
- Contact information for the test organizer

Recruiting

You can either recruit customers through your own outreach efforts or hire an agency that specializes in recruiting. An agency will charge a recruiting fee for each person they find and schedule them for you. This is a cost separate from any incentive you might give customers for participating in your test, such as cash or a gift card.

You will want approximately five participants from each relevant customer segment. The key to deciding which segments to test comes down to their behavior. For example, if you think that customers who are experienced with your product will behave differently than new customers, then you have two groups to test. Test sessions will typically last about one hour.

Scripts, Tasks and Scenarios

To see if the goals have been achieved, each participant must be presented with the same tasks or scenarios. The moderator will use a script to ensure consistency and mitigate bias. In fact, one of the moderator's main jobs is to keep bias to a minimum. This means no leading questions, no demonstrations and no commenting on the participant's feedback.

Test Materials

The design team will prepare a sequence of screens for each task or scenario that the moderator presents. To run a test, your test materials (design concepts) do not have to be advanced.

You can use a simple paper prototype. Don't wait until you have beautifully polished final designs; test early to save time and money. As your design concepts develop, your tests will use materials that increasingly look like your final product.

Test Day

Before starting each test session, the moderator will ensure that the participant has signed the participant agreement.

During the test, the moderator presents a series of tasks or scenarios and asks the participant to demonstrate what they would do using the available concepts. As the participant works, the moderator will ask them to "think aloud" to help understand how well the concepts are performing. When the participant believes they have completed the task, they will be asked for their thoughts on what they have just done. Between test sessions, and at the end of each test day, the moderator will debrief with the observation team to determine key themes that emerge.

Having access to high-quality UX skills is a necessity.

Reporting

At the end of the test, designers will analyze the results and prepare a brief report to highlight key findings and recommendations. These results are also compared with the stated goals to determine if the design concepts or software were effective or not. The concepts will be adjusted as needed to address any shortfalls.

STEP 4. FINALIZING DESIGN

User Interface Specification

After several rounds of developing and refining concepts and then validating them, you should be confident that your team has designed software that your customers will value and want to use. When you have reached a point where you have achieved an effective design solution, it's time to convert it into working software. This is the programming team's job.

To facilitate the programmers' work, your designers will produce a user interface specification (UI spec) that the programming team will use to guide their work. It will show the validated screens and detail how the software's functionality is intended to operate. In a perfect world, the final working software should follow the UI spec faithfully.

The UX Process and Why It Will Benefit You

The ever-increasing and important role that the interface plays in a product's success requires the product management team to pay close attention to its development. Having access to high-quality UX skills is a necessity. Unfortunately, the huge demand for these skills makes this difficult. The good news is that learning UX fundamentals is usually not a huge stretch for product professionals.

One of the first signs that you're on your way is recognizing where you may need to modify and add to your existing processes. In time, you should feel increasingly more confident about what your customers actually need, instead of guessing. With this foundational overview of the UX process that places your customer at the heart of the process, you will significantly increase the likelihood of creating software they will want and pay for. PM

About the Author

Peter Hughes has spent more than 20 years conducting usability tests for industry-leading corporations and organizations such as JPMorgan Chase, MetLife, T. Rowe Price, Boeing, Honeywell, Hearst Media, Scholastic, the College Board, Nintendo and The Robert Wood Johnson Foundation. He is founder and lead consultant at Ascest, where he coaches organizations on how to bring the usability testing skills they need in-house and squeeze the most out of those tests. If you have questions about the UX process, email Peter at hello@ascest.com.

THE ART OF PRODUCT MESSAGING

BY ABDUL RASTAGAR

"Words are free; it's how you use them that may cost you."
—Unknown

ONE OF YOUR PRIMARY RESPONSIBILITIES IS to own how your product is perceived. And unless you actively define what your product stands for, customers will assign their own meaning to it. Or worse, they will allow your competition to shape their perception.

Unfortunately, in the hectic rush to launch on time, too often teams spend virtually all their time on product development. Downstream planning becomes an afterthought, executed as a check-box exercise that happens just prior to, or even after, launch. It is little wonder that messages are often inconsistent, confusing, contradictory or just plain wrong. Simply put, your words matter. Whether customers perceive a product as good, rather than great, is often the result of product messaging.

Developing the right messaging requires significant effort and resources. It is not simply jotting down the top three to five features and expecting your marketing department to own it from there. Yet, this happens all too frequently. Rather than focusing on your product's functionality, your messaging needs to be closely tailored to your audience's key needs, differentiated from your competitors and focused on business benefits. While there is no one universally accepted format, there are best practices that should guide you.

TAILOR YOUR MESSAGING

It should go without saying that messaging needs to target your audience. The trick is knowing who your audience is and what their needs are. "But I know who my audience is," you say? And perhaps you are correct. Chances are, you spent a fair amount of time talking to them as you developed your product. But the real question is, do you know who the decision-makers are?

It's tempting to focus on end users because they are the people you've been building the product for. As a consequence, messaging often becomes feature-centric, with too much emphasis on the details of specific functionality. But beware. Often, buyers and users are two entirely different sets of people and their underlying buying motivations can differ drastically.

For instance, consider the buying criteria of the corporate procurement department vs. the criteria of your users. One will focus on cost, while the other will be biased towards usability. To complicate matters, myriad additional stakeholders may be involved as well, including IT, compliance and so forth. Clearly, you cannot—and should not—try to develop messaging to all of these diverse groups at once. It is imperative that you identify the right decision-making audience and tailor your messaging to their needs.

IDENTIFY DIFFERENTIATION POINTS

A great litmus test for determining message differentiation: Remove all of the names, brands and logos from your competition's marketing collateral and from your own. If you can't tell the difference between your messaging and theirs, how can you expect your customers to tell them apart?

When buyers see the same language on multiple, competing sales presentations, they will assume each product is the same and simply make their buying decision based on the lowest price. For this reason, competitive differentiation is of the utmost importance.

Unfortunately, differentiating your message is not necessarily a straightforward exercise, since you cannot control what your competitors claim. Ideally, you will want to identify three unique differentiation points. Here again, it is tempting to default to product features as differentiators. However, customers have a broader and multifarious perspective. What's more, as we saw earlier, functionality isn't always the top priority for decision-makers. Think beyond product functionality. Concepts such as vendor reputation, financial stability, a track record of compliance, an extensive peer network, access to unique data sets, total cost of ownership and more can be part of your differentiated messaging.

FOCUS ON BUSINESS BENEFITS

For product teams who spend a lot of time developing new products, it can be difficult to accept that prospective buyers rarely make purchasing decisions based on features. How can this be? After all, they constantly ask about it during demos, on RFPs and at presentations, so it is easy to assume that functionality is their primary concern.

The reality is far more complex. What they are doing is vetting that your product meets their basic functional needs. However, this is only one aspect of a far more heterogeneous buying decision—one that is influenced by a multitude of different, and sometimes competing, factors. Product-centric messaging, therefore, will likely miss the mark. Instead, focus the message on business benefits. How will your solution move the prospect's business forward? What is the ROI? Will it lower costs or drive revenue? Will it enable compliance? The point is to focus on the business outcome your buyer can expect.

Note that the focus on business outcomes applies even if your target audience is technology buyers. The IT department does not purchase technology for the sake of owning technology; there is an underlying business motivation that compels it to seek a solution (protecting the company, cost control, supporting the business, etc.)

GETTING IT RIGHT

Another common challenge is when to develop your messaging. A key mistake is to defer thinking about messaging until late into product development, when you are consumed with meeting launch deadlines and can't dedicate the necessary time to get it right. In fact, the conversation should happen much earlier. If you know you are going to build something and you know what problem it solves, you are ready to think about your market messaging.

Getting it right also means that you need to convene a team of experts who understand your market and customers. Typically, this includes gathering sales, solutions consultants, marketing, services, strategy and anyone else with a strong market perspective for a comprehensive, multi-day discussion.

Rather than starting the conversation with your product, focus on understanding the external factors: the market landscape, your customers' current and evolving needs, the competitive situation and any other tangential business drivers that may impact your customers' lives. Once you have a holistic understanding, you can begin to map your product capabilities against customer business needs and outcomes (with a keen eye toward competitive differentiation.)

The next vital step is to road test your messaging externally. This can be done using a paid market-research study or a set of close and trusted partners. Often, you'll find that third parties have a different perspective that you may not have fully considered.

And as your sales team rolls out the new messaging to select or beta clients, be sure you have a seat at the table so that you can understand how customers react. Be prepared to continue to refine your messaging in the early phases as you gather feedback. This is why it is important to develop your messaging well in advance of the full product launch.

OWN THE MESSAGE

Message development is not a quick, ad hoc exercise; it requires a more dedicated and structured approach. Few individuals have a greater stake in getting your product to succeed than you do. Assigning meaning to your product is too important to be left to the whim of others. Your partners in marketing and sales can help shape the message, but ultimately, the product team must own this vital aspect of product, just as you own the roadmap. PM

About the Author

Abdul Rastagar is a B2B marketer, fierce customer advocate, digital and future enthusiast, and all-around curious guy. When not expounding about all things marketing, he can usually be found outside climbing trees with his kids. Connect with Abdul at linkedin.com/in/rastagar.

WHY THE PRODUCT TEAM MUST

"WHO SHOULD OWN PRICING?" When I ask students this question, it almost always evokes emotion. Some people respond confidently, while others are more sheepish. And a lot of people think their companies are doing it wrong.

Before we answer this question, it's important to define just what it means, because there are so many pieces to the pricing puzzle. For example, someone must decide which pricing model to use. SaaS or perpetual license software? Do we price by the seat, the gigabyte, the transaction or something else? Usually, executives decide this, or at least participate in the decision.

Another aspect of pricing is to negotiate discounts. In most companies the sales team does (and should) own this part of pricing.

However, when most people respond to the question, they focus on who is responsible for setting the price, which involves determining the list price and often establishing guidance for discounting. For now, let's agree with most people. When we ask, "Who owns pricing?" we mean who sets the price.

Using this definition, the answer is obvious: It must be someone from the product team. These are the people in the company whose job it is to know how much value the product delivers to buyers. And the person setting the price must know value to put in place value-based pricing (VBP).

VBP is the basis for all profit-maximizing pricing strategies. It means we charge based on what buyers are willing to pay, which is a function of the value buyers receive. The product team is uniquely positioned to know that value and determine how much markets are willing to pay.

How do customers decide their willingness to pay? They make their decision using one or both of the following methods: value in use or value in choice.

Value in use is when customers estimate the inherent value they

OWN PRICING

BY
MARK STIVING

get from buying a product. They will pay some percentage of that value to buy the product. For example, how much would you pay for gas if you're in the middle of the desert, your gas gauge is on empty and you see a sign that says "Last gas for 75 miles"? Probably a lot. That is value in use.

Value in choice is when buyers compare your product with an alternative. If they decide they get more value from your product, they will buy it. Imagine a busy intersection with a gas station on each corner, and your gas tank is empty. How much would you pay to buy gas at the most convenient station if all the other stations are charging $2.25? Probably much less than what you would pay in the desert. That is value in choice.

To use VBP, a person must understand the value that the markets and market segments receive from using your products. They must be able to put a dollar value on it. Even more challenging, they must understand value in choice. This means knowing competitors, their prices, how they are different (better and worse) and how much buyers value those differences.

Who inside your company understands this value? The product team. They know the competitive landscape and understand how your buyers make decisions. And because they must understand all these things, they should be responsible for setting prices.

THE PRODUCT TEAM KNOWS THE COMPETITIVE LANDSCAPE AND UNDERSTANDS HOW YOUR BUYERS MAKE DECISIONS.

Your finance team should not own pricing. Finance has the desire—but not the knowledge—to set prices based on value. Although they care about margins and understand costs, finance people don't know the value their products deliver and they don't know their competitors' products. If finance sets prices, the only method they can use is cost-plus pricing.

You might argue that sales could set price. After all, great salespeople are value-focused; they try to understand value from each buyer, which aligns with VBP. However, they have two strikes against them. First, salespeople have the incentive to close deals quickly, which often means dropping the price. Second, they don't see the entire market, only their specific customers. Someone needs to aggregate this information to provide companywide guidance.

An additional reason the product team should set prices: They determine what the next product will look like and which features have highest priority. Whoever makes that decision is who I want to own setting prices.

Why? Because companies should strive to make products that buyers value more. To do that, they must choose the best new features, ones that add more value to their product in the minds of their buyers. If product management owns setting prices, they are in that exact mindset. They get to decide which new capabilities might give them the ability to charge more.

What is different if finance sets prices? Again, the only way finance has to set prices is cost-plus. They take the cost and add a margin. When deciding whether to add a new feature, product management then would only need to determine if buyers are willing to pay more than the cost plus the margin. If the answer is yes, then put the feature in. If the answer is no, omit it.

This would be especially onerous for software companies. The marginal cost of manufacturing any new feature is near zero. This would allow product management to say yes to virtually anything and still meet that rule. The product manager has no incentive to find new high-value features. The company won't charge for them. Hence, the company ends up with only slightly better products.

If sales sets pricing, product management doesn't need to understand the value of their product. When deciding which features get priority, they would just rely on sales. In fact, when sales sets pricing, they become the de facto product team. To make it worse, each new capability sales asks for will be based on direct customer requests. It's a surefire way to ensure that the company only builds incremental innovations.

The right answer is to let product management set the price. Their goal should be to choose the price and product features that maximize the profitability of the product. They can trade off the importance of customer requests against the value of brand-new capabilities. They have control of both important levers, price and product.

If you want to maximize profits, the product team is the only section of your company with the knowledge and incentives to effectively implement VBP. More important, if you want to create more valuable new products, the people who define the next product should also be in charge of setting its price. PM

About the Author

Mark Stiving is a Pragmatic Marketing instructor and pricing expert with more than 20 years of experience in business startup, development, management, turnaround, and sales and design engineering. He has helped companies create and implement new pricing strategies to capture more from the value they create, consulting with Cisco, Procter & Gamble, Grimes Aerospace, Rogers Corporation and more. He served as president of both Home Director Inc. and Destiny Networks Inc. and as an assistant professor of marketing at The Ohio State University. Mark is the author of *Impact Pricing: Your Blueprint to Driving Profits* (Entrepreneur Press, 2011). Contact him at mstiving@pragmaticmarketing.com.

PRIORITIZE PR

WITH THE 5 QUEU

DEPARTMENTS

THERE ARE TWO APPROACHES TO DELIVERING WORK to your product team: push and pull.

In many organizations, product management and executives are pushing more and more requests to developers. In practical terms, that means product management builds long backlogs of prioritized requirements. They group them into themes or releases and send developers a few hundred items at once.

This long list of stories can overwhelm developers, damaging their spirit and productivity. And over time, they may become paralyzed by their unfinished work. This push approach also tends to deliver a lot of disconnected stories. You end up with 80 percent of everything and 100 percent of nothing. Most important, pushing a lot of work at once makes it challenging to reprioritize that work when business conditions change.

But there is an alternative. Instead of pushing work to developers, let them pull work whenever they can take on new tasks. In this scenario, the product team maintains a comprehensive list of prioritized work that can be reshuffled at any time. When developers have the bandwidth, they request more work and product management shares the next item on the prioritized list.

Let me share an example of why this is helpful. While consulting at one company, I was told the development team was terrible; they couldn't seem to finish anything. The problem, I discovered, wasn't with the developers, but with the constantly changing priorities. And with an ever-changing priority list, the developers couldn't complete anything before another new "top" priority interfered.

To remedy the situation, we switched the team from a push to a pull approach. New ideas went into the product management queue, where they were prioritized based on business value and then delivered to development as bandwidth allowed. We never interfered with anything in progress. Working in short cycles meant we didn't have to wait months or years to begin a new initiative because important new items could be started every week. By allowing development to complete all work already in the queue and prioritizing new work based on its business value outside of that queue, productivity increased dramatically.

Product Stories and the Five Queues

The five queues—*planning, ready, in progress, accepted* and *released*—are based on the kanban principles for managing and improving workflow. To implement the pull approach, you leverage a series of staging queues with each product story moving from one stage to the next as it progresses.

Using these queues, product management can see the status of any story. In addition, they can ensure that only a few items are in the *in progress* (or development) queue.

ODUCT DELIVERY
IES

BY STEVE JOHNSON

Planning
All ideas begin in the *planning* stage, where you can flesh out the context with personas, problems and critical dates.

Many teams have a large number of items in *planning:* architectural epics, executive projects, customer requests, competitive parity features, etc. These items need to be validated in the market to ensure they're worth doing. That's why the *planning* queue is for product management, not developers.

As you discover more information, such as outcomes, needs and constraints, this gives you a place to document it in the story to ensure that all your business logic is in one place.

Ready
The *ready* queue is for stories that are ready for development but haven't been shared with the team. In this queue, you can continually adjust priorities and provide more context until the story is turned over to the development team.

However, just because something has a high priority, doesn't make it the most important thing to work on next. Be sure to ask, "What is critical to be done in the next 90 days?" or, "What must we do to survive?" These are the items you will send to the *in progress* queue.

In Progress (or Development)
The *in progress* stage is for active development. All the items currently being worked by your development team live here. Work will be pulled from *ready* to *in progress* only when the development team can take on more work. It's important to limit work in this queue, as teams can become overwhelmed if there is too much inside their backlog.

Accepted
Product management hands work to the developers; developers finish the work and then we call it "done." But is it? Maybe you've heard the phrase "done done." It's not done until the work has been formally accepted by product management.

A story moves into the *accepted* stage only when all its required elements—needs, constraints and outcomes—have been satisfied. The development team demonstrates each of the elements so the product team can accept or approve the completed work.

The product team must acknowledge that the feature works as expected and is ready to go into production to move to the *accepted* stage. And only in this stage can the product team discuss that feature with salespeople and customers. A feature sits in the *accepted* queue until it is publicly available.

Just because something has a high priority, doesn't make it the most important.

Released (or Delivered)
When the story is available to the public, it moves into the *released* queue. Now take a moment to celebrate.

If you want to ship a production product, be sure to maintain a backlog of planned work. Add new work to the master list, and don't allow anyone to bypass that list. Be sure to prioritize all new ideas for their business value and continuously re-sort that list. Then when the development team asks for more work, the top priority will be available.

Whether it is an executive priority, a customer commitment or an architectural epic, the five queues ensure that you will deliver what is most important to your company and customers. PM

About the Author

Steve Johnson is an author, speaker and strategist within the technology product community. He is co-creator of Under10 Playbook, software for managing the business of software, and author of *Turn Ideas Into Products*. Before founding Under10, Steve was a Pragmatic Marketing instructor for over 15 years and trained thousands of product and executive teams.

INTERNET OF THINGS: A PRIMER

BY
DANIEL ELIZALDE

THE INTERNET OF THINGS will require a new breed of product manager—one who can incorporate the five layers of the IoT technology stack into their product strategy and roadmap. In this article, you'll gain a high-level understanding of these five layers and what it takes to manage a product for the IoT.

IT'S ESTIMATED THAT 15 BILLION DEVICES ARE ALREADY connected to the internet. By 2020, that figure will rise to over 50 billion connected devices. This is the internet of things (IoT), the latest industrial revolution that will have an enormous impact on business and daily life.

Each industrial revolution creates the need for a new kind of engineer who can implement, maintain and innovate on its new technologies. The first Industrial Revolution of the late 18th and early 19th centuries gave birth to the field of mechanical engineering. As electrification began to spread across the world during the second Industrial Revolution of the late 19th century, universities began to offer programs in electrical engineering for the first time.

The same need emerged in the 1960s and 1970s with the digital revolution (the third Industrial Revolution). The rapid explosion of the computer industry gave birth to new degrees in computer science.

The internet of things is considered by many to be the fourth Industrial Revolution. But unlike the first three, it is not a new technology—it is a new way of combining *existing* technologies. It will not require a new kind of engineer, but it *will* require a new kind of product manager. Today, few people understand how an IoT product works, both as a whole and within each layer. This understanding is critical for creating IoT product strategies and guiding the creation of IoT solutions.

The rise of IoT will require a new generation of highly skilled product managers.

The rise of IoT will require a new generation of highly skilled IoT product managers.

For those of you who think IoT is just about connected toasters and coffee machines, think again. The real impact of IoT will be on the industrial side. Companies are already working to tackle the biggest problems of our generation by applying the IoT to modernize the electrical grid, transportation, food production, water supply, health care and other critical infrastructures.

The IoT Technology Stack

The first step to managing an IoT product is to understand the five layers of the IoT technology stack. By breaking down a full IoT solution into these five layers, you can better understand and analyze the business and technology tradeoffs that are needed at each level and in the system as a whole. These layers are:

- **Device hardware**
- **Device software**
- **Communications**
- **Cloud platform**
- **Cloud application**

As an example, let's imagine you're creating a product that monitors a wind turbine. This product anticipates when the turbine needs maintenance, thereby saving millions of dollars in potential damage to the turbine and avoiding interruption of service. Let's take a look at each layer and explore what product management needs to keep an eye on, using the wind turbine monitoring product as an example.

Device Hardware

Devices constitute the "things" in the internet of things. They act as the interface between the real and digital worlds.

The first thing to consider is whether your product is the connected device itself (e.g., the Nest thermostat) or whether it turns an *existing* device into a connected device by adding instrumentation (i.e., adding sensors and communication to a wind turbine). In this example, you're not selling the wind turbine, just the device that connects to the wind turbine.

One of the main goals of your device (from an IoT perspective) is to collect data. So you need to think about what kind of data you are collecting and what hardware you need to do that. For simple data-collection needs, you may need a single smart sensor. For more complex data collection, you may need an industrial computer that houses many sensors, a powerful processor, local storage, a gateway, etc.

At this level of the stack, it's also important to understand some implications of cost, size, ease of deployment, reliability, useful lifetime, etc. For example, for small devices like smart watches, you may only have room for a system on a chip (SoC). For more demanding solutions, you may need an embedded computer like Artik module, Raspberry Pi, Arduino or BeagleBone board. For really serious computing needs, you may need advanced industrial computers like compact RIO or PXI.

For the wind turbine monitoring product, you'll need an accelerometer as the sensor to collect vibration data. If the vibration is outside a certain range, that means the wind turbine needs servicing. Since this is a heavy industrial application, you'll probably need to use an industrial computer, because it has enough computing power and already has integrated accelerometers. Your device will also need hardware to communicate the data up to the cloud.

Device Software

Device software is the part that turns the device hardware into a smart device. This part of the IoT technology stack enables the concept of software-defined hardware, meaning that a particular hardware device can serve multiple applications depending on the embedded software it is running.

Device hardware and software work together to create a smart device, so why keep them separate? It's helpful to think of them separately because they are built by different teams using very different requirements, processes and timelines. Device software will be developed by software engineers using an agile approach. Devices, on the other hand, will be developed by a hardware engineering group following a hardware NPI process. This separation will make your job much easier as you plan roadmaps and work with various teams.

Device software allows you to implement communication to the cloud or to other local devices. You can implement real-time analytics, data acquisition from your device's sensors and even control. This part of the IoT technology stack is extremely important because it serves as the glue between the real world (hardware) and your cloud applications. It'll be up to you and your team to decide how much functionality is placed here vs. in the cloud.

You can also use device software to reduce the risks of hardware development. Building hardware is expensive, and it takes a lot longer than software. So instead of building your hardware for a narrow and specific purpose, use generic hardware that can be customized by your device software, to give you more flexibility down the road. In this way, you can update your embedded software remotely via the cloud, which will update your "hardware" functionality in the field.

The device software layer can be divided into two categories:

Edge Operating System

The complexity of your IoT solution will determine the type of edge operating system (OS) you need. Some of the key considerations include whether your application needs a real-time OS, the type of I/O support you need and whether you need support for the full TCP/IP stack. Common examples of embedded OS include Linux, Brillo (scaled-down Android), Windows Embedded and VxWorks, to name a few.

Edge Applications

These applications run on top of the edge OS and provide the functionality that's specific to your IoT solution. Here, the possibilities are endless. You can focus on data acquisition and streaming to the cloud, analytics, local control and more.

For the wind turbine monitor, the accelerometer will take frequent samples to measure vibration. This produces an enormous amount of data. But you don't need to send it all to the cloud—just the data that indicates there's a problem. The edge application software will monitor the data locally and only send warning and error conditions. It will also perform real-time control to shut down the turbine if vibration goes out of the parameters you specify.

Communications

Communications refers to the different ways your device will exchange information with the rest of the world. This includes both physical networks and the protocols you will use. It's true that the communications mechanisms are tied to device hardware and software, but it's worth thinking of this as a different layer.

Selecting the right communication mechanisms is a key part of constructing your IoT stack. It will determine not only how you get data in and out from the cloud (for example using Wi-Fi, WAN, LAN, etc.), but also, how you communicate with third-party devices in the same building.

For example, it is common for systems in smart buildings to communicate with each other using the BACnet protocol. If your device is involved in building automation, it's a good idea for your device to provide BACnet support, even if you're not sure yet whether you want your device to talk to other devices in the building.

Your communications strategy has an impact on the overall topology of your system. For example, if your system has 10 sensors, should each one perform control and communicate to the cloud? Or should you have 10 simpler (and cheaper) sensors that communicate to a central gateway for aggregation and long-range transmission of data?

These are not purely technical decisions. These are business decisions that product management needs to make while considering the impact to cost, deployment and technical complexity of the solution.

For the wind turbine monitor, your first inclination might be to connect to a local area network. But your wind farm is in the middle of nowhere, and all you have is a nearby cell phone tower. So you will have to connect to the cloud via cellular communication. This will have implications for your device's hardware and software, and your cost, because you will have to pay a cell phone carrier for the connection. This additional cost also supports the decision to only send the error data to the cloud, not the entire data set produced by the accelerometer, because the more data sent, the more it costs.

Cloud Platform

The cloud platform is the backbone of your IoT solution. If you are familiar with managing SaaS offerings, then you are well aware of everything that is entailed here. Your infrastructure will serve as the platform for three key areas.

Data Collection and Management

Your smart devices will stream information to the cloud. As you define the requirements of your solution, you need to have a good idea of the type and amount of data you'll be collecting on a daily, monthly and yearly basis.

One of the challenges of IoT applications is that they can generate an enormous amount of data. You need to make sure you define your scalability parameters so that your architects can define the right data-management solution from the beginning.

Product management needs to provide clear direction on the vision for the overall IoT solution.

Analytics

Analytics are one of the key components of any IoT solution. I'm referring to the ability to crunch data, find patterns, perform forecasts, integrate machine learning, etc. It is the ability to find insights from your data, and not the data alone, that makes your solution valuable.

Cloud APIs

The IoT is all about connecting devices and sharing data. This is usually done by exposing APIs at either the cloud level or the device level. Cloud APIs allow your customers and partners to interact with your devices or exchange data. Remember that opening an API is not a technical decision, it's a business decision.

Product management needs to provide clear direction on the vision for the overall IoT solution, so the technical teams can determine the right cloud architecture. Product management

also needs to evaluate the cost and complexity of development of the cloud platform via a build vs. buy analysis.

The inclination of every technical team is to build the complete solution from the ground up. But regardless of whether the team is capable of doing it, it's important for product management to determine if building your cloud platform makes business sense not only from the development perspective, but also in terms of the total cost of ownership, maintenance, support, reliability and time to market.

In many cases, it might be better to leverage existing PaaS (platform as a service) frameworks like GE's Predix platform or SAP's Hana. The IoT industry is young, but some giant software players are already entering this space. Examples like Parse from Facebook or Thunder IoT Cloud from Salesforce are indicators that the IoT platform industry will continue to evolve rapidly, and that building everything from scratch might quickly become counter-productive.

For your wind turbine monitor, let's think about how much data you'll have to store. The data from one turbine might not seem like a lot. But over years, it will add up. Plus, remember that your cloud platform needs to support data from thousands of wind turbines. In time, this will be an enormous amount of data, so your cloud infrastructure must allow for flexible storage and data processing.

Additionally, your cloud analytics must process incoming data in real time to detect trends and make predictions about when the turbines will need service. You'll also need to open an API to surface this information to your application layer.

Cloud Applications

This part of the stack is most easily understood by product management and executives. Your end-user applications are the part of the system that your customer will interact with. These applications will most likely be web-based and, depending on user needs, you might need separate apps for desktop, mobile and even wearables.

Even if your smart device has its own display, your customers are likely to use a cloud application as their main point of interaction with your solution. This allows them to have access to your smart devices anytime and anywhere, which is part of the point of having connected devices.

Product management must understand users and the jobs-to-be-done of your product. When designing end-user applications, it is important to understand who the user is and their primary goal for using your product. Keep in mind that for industrial IoT applications, you'll probably have more than one user.

Applications can also be divided into customer-facing and internal apps. Customer-facing applications usually get the most attention, but in the case of IoT, internal applications are equally important. These include applications to remotely provision and troubleshoot devices, monitor the health of your device fleet, and report on performance and predictive maintenance.

Internal applications require a deep understanding of your external and internal customers and the right prioritization and resourcing to make sure they don't fall through the cracks. They are a key component of an IoT solution, so it's product management's responsibility to ensure they get done.

For the wind turbine monitor, one possible application would be a web app used by wind-farm operators working in a central control room. This app displays information and trends on the thousands of turbines the operators manage and alerts them when a particular turbine needs service. The operator can get this information in real time and dispatch the service team to perform preventive maintenance, avoiding costly repairs and service interruptions.

The Bottom Line

As the internet of things continues to grow, the world will need an army of IoT-savvy product teams. These teams will need to understand each layer of the stack, and how the layers fit together into a complete IoT solution. Product management will need to make strategic business and technical decisions at each layer to ensure the success of their products. PM

About the Author

Daniel Elizalde is the founder of TechProductManagement, where he trains product managers around the world to become highly successful at managing IoT products. He is the author of the leading blog on IoT product management and the creator of the IoT Decision Framework. Daniel also teaches the popular course "Product Management for the Internet of Things" at Stanford Continuing Studies. Follow Daniel on Twitter at @delizalde.

THE B2B BUYING DISCONNECT:

Insights on the Gap Between Vendors and Buyers

BY MEGAN HEADLEY

RESEARCH FROM A NUMBER OF ANALYST firms over the past few years has revealed that the B2B purchasing process has changed—the new technology buyer is more empowered and conducting more independent research than ever before. What's unclear is how technology vendors have adjusted their go-to-market strategies to match this new paradigm. In fact, some vendors see this as a threat; the message is no longer in their control and they aren't sure how to maintain their influence.

But the empowered buyer actually represents an opportunity for vendors.

TrustRadius, a review site for B2B technology, recently surveyed more than 600 B2B technology buyers and vendors to understand what empowered buyers want and how vendors are responding to this shift. We wanted to identify areas of alignment, as well as gaps between how buyers are making their decisions and how vendors are trying to influence them.

It revealed some interesting lessons for vendors on how to better serve buyers.

What You're Probably Doing Right: Demos

Buyers and vendors both see hands-on experience as one of the best ways to evaluate a product. More than 75 percent of buyers used product demos in their purchase process, and 87 percent of vendor respondents shared demos with prospects. Product demos and free trials were two of the top three most helpful and trustworthy information sources for buyers. Vendors also identified demos as the most effective content type for helping to convert prospects.

That said, not all demos are created equal. In qualitative responses, buyers showed a strong preference for demos personalized for their situation.

> "They knew their product and were very comfortable explaining items not normally part of the demo. It was not a rehearsed script."

> "Our vendor tailored a demo to our needs and I could look under the hood in a way that helped evaluate the product, compared to our use case."

> "Demos applied to our specific problems were most powerful."

Conversely, buyers questioned the value of demos that felt biased, rehearsed or too general.

> "Product demos always make it seem simple—does not offer a nuanced view of the software."

> "The demos were not super helpful because they seemed to lack the depth of information we needed to choose a product."

> "Vendor presentations are too scripted and don't focus enough on our individual needs."

KEY LESSON: Make sure buyers have access to a realistic demo of your product that's targeted and relevant to them.

What You're Probably Doing Wrong: Marketing Collateral

The biggest disconnect identified was around vendor marketing collateral. Buyers ranked vendor collateral and the vendor/product website as both the least helpful and least trustworthy information sources. However, the vendor/product website was the second most commonly used information source. It is clearly a source of information buyers rely on, but also one they treat with caution.

Vendors themselves seem to recognize that marketing collateral is not very effective: Videos, white papers, eBooks, blogs and infographics were the least effective content types, according to vendor respondents in our survey. Yet these are also some of the most commonly used content types by vendors, possibly because that type of content is squarely within a marketer's control.

Buyers who didn't find vendor material helpful described it as biased, sorely lacking detail and solely aimed at pushing them down the funnel.

"Vendor websites are typically wishy-washy with lots of claims and not a lot of evidence to support their blue-sky view of the perfect setup environment."

"Vendor websites were not usually specific enough to help me make my decision."

"A product website will obviously claim to be the best, so it's less trustworthy."

"Vendor websites are limited, provide little insight and are only geared to get your information for a sales call."

"Vendor collateral is often puffery and glosses over important details."

As with demos, not all marketing collateral is created equal. The materials that buyers preferred were balanced, thorough, personalized and detailed.

"[Re: Vendor collateral] Really helped to understand the product and service, the pitfalls, the options."

"The vendor website clearly explained all features and what the product could offer without having to sign up for some exhaustive and boring WebEx, which is usually followed by a pitch to strong-arm you and hassle you into buying the software."

"I liked that [the vendor] was open and did not hide anything about their product."

KEY LESSON: Make sure your messaging provides the kind of information and detail your buyers are looking for. Include claims that are honest, balanced and believable to buyers. Wherever a claim might seem like a stretch to buyers (e.g., "Our customers are seeing a fivefold ROI from their purchase"), let a more believable source do the talking—such as your actual customers.

Your Biggest Untapped Opportunity: Customers

The final key takeaway from our study is that you're probably not fully leveraging the army of voices at your disposal that your buyers do want to hear from: your customers.

What led us to this conclusion?

1. Buyers want to hear directly from end-users

After product demos and free trials, the two most helpful information sources for buyers were direct referrals from peers/colleagues and user reviews. Buyers see day-to-day users as the best resource to get a true picture of how the product works, how it compares with alternatives and whether it's the best fit for their situation.

"User reviews on third-party sites were the most trustworthy, as these felt more balanced and highlighted the limitations of the software, which gave us the chance to plan around it."

"We liked hearing stories from customers about the pros/cons and how [the product] could meet their complex needs."

"There is no better reference for a product than someone who uses it day in and day out."

"The user reviews and demos let you get hands-on or listen to others with real experience implementing the product."

Vendor-provided customer references were also considered fairly helpful, though not as trustworthy as other information sources, because buyers expect them to be highly vetted. As one buyer put it, "Vendors provide references to satisfied customers, not unhappy ones." However, vendor-provided references are especially helpful when they seem balanced, are relevant to the buyer's use case and match information the buyer finds elsewhere.

> "The references provided by the vendor shared the same experiences that the vendor told us to expect. There was transparency in the process."

> "Customer references were the most helpful. They were able to tell me their pain points as well as successes, and I felt that I had a good idea of what I was getting myself into."

2. Most customers are highly satisfied

We asked buyer respondents, now that they're using the product, how likely are they to recommend it to a friend or colleague? Most buyers ended up highly satisfied with their purchase—46 percent were promoters, giving the product a 9 or 10 satisfaction rating, and another 35 percent rated the product an 8 out of 10. Only 8 percent were actual detractors.

Depending on the size of your customer or user base, that translates into a lot of individuals who could be providing in-depth, balanced, trusted insights to your buyers—exactly the kind of authentic feedback buyers are looking for from real, day-to-day users.

3. Most customers are not asked to share their insights

Few buyers had been able to share their insights on the product they purchased in a way the vendor could broadly leverage with prospects. More than 40 percent had actually recommended the product to an acquaintance. However, this is a one-on-one interaction, which is opportunistic and not something vendors can use to directly influence prospects.

Only 20 percent of buyers had served as a customer reference, provided a testimonial or provided a case study for the vendor. Yet vendor respondents identified this kind of customer evidence as the most effective content type to share with prospects, after product demos.

Two factors could contribute to this low number: (1) Vendors often struggle with complex approval processes to get their customers on the record via an official case study or testimonial and are hesitant to overtax their customer references; and (2) vendors often feel they need to limit themselves to the happiest of happy customers and sometimes aren't even sure who those customers are. Yet we know from buyers that they're looking for balanced, authentic feedback, and don't trust glowing or highly vetted feedback.

Critical feedback isn't likely to prevent buyers from purchasing your product.

KEY LESSON: Invite all your customers, regardless of sentiment, to openly share feedback about your product. You'd be surprised at how willing your customers are to speak on your behalf, and your buyers will appreciate hearing from your entire customer base, not just your advocates. Critical feedback isn't likely to prevent buyers from purchasing your product; rather, it will help them get a full picture and trust the information you're providing.

Make It Easy for Your Buyers

It's clear from our study and others that B2B buyers are both skeptical of vendor collateral and empowered to do independent research, with a number of information sources available at their fingertips. However, they still need to do the work to piece everything together.

By creating materials that offer balanced perspectives, as well as proactively connecting buyers with resources they find helpful and trustworthy—even those you don't fully control—you can build an influential relationship with your prospective buyers and bridge the B2B buyer disconnect. PM

About the Author

Megan Headley is research director at TrustRadius, where she is responsible for ensuring that the review platform offers the most useful, insightful and trustworthy end-user data for B2B buyers. As such, she and her team regularly conduct research into the technology buying process. TrustRadius also works with technology vendors to help them get their customers on the record, authentically and at scale, to engage and convert buyers in their own marketing channels. Prior to joining TrustRadius, Megan was director of sales and marketing at a media company. Email Megan at megan@trustradius.com, or connect on LinkedIn at linkedin.com/in/meganfheadley.

The full survey report and dataset are available at vendors.trustradius.com/b2b-buying-disconnect.

HOW TO MEASURE YOUR

Customer Advisory Board Program ROI

BY
ROB JENSEN

MEASURING THE IMPACT OF A CUSTOMER ADVISORY BOARD (CAB) program is not always an easy, straightforward task. Like many aspects of marketing, CAB ROI requires incorporating a mix of hard and soft dollar amounts to explain and justify the program to your senior management team. But while it can be an inexact science, measuring CAB success doesn't have to be rocket science.

Here are 10 metrics to help you track and measure the ROI of your CAB program and gain executive buy-in.

1 Member Revenue

CAB members are almost certainly some of your company's best and largest customers, and it's important to monitor the revenue they generate. Ideally, you'll want to begin monitoring them before they join your CAB, because if you're like most companies, you will see an increase in their spending over time once they join.

Our research shows that starting in year two, companies enjoy a 9 percent increase in new business from CAB members vs. non-CAB members. While such increases may not be due entirely to the CAB initiative, your customers' involvement is almost certainly a contributing factor to an increased commitment to your company and its solutions.

2 Average Customer Spend

Input from your CAB program will provide a better understanding of your customers' unmet needs, allowing you to deliver more value. Set a goal to increase overall average customer spend (or average selling price) to your customer base. We've seen companies shoot for 10 to 15 percent increases and achieve those goals as a result of direct input from their CAB program.

3 Loyalty

Customers don't just leave because they're unhappy with your products; they also leave when they believe they aren't hearing from you or don't think they're being heard by you (or maybe both). Begin tracking member attrition, if you're not already doing so. You should see that CAB members leave at a much lower rate than non-CAB customers because of the inside track they enjoy with your leadership team and the product and service roadmaps that they help shape. In fact, companies often enjoy a retention rate of 95 percent among advisory program participants. In addition, if customer attrition is an issue at your company, your CAB program can help uncover why it's happening and help you lower the rate across the customer base.

4 Referrals

CABs can uncover challenges relative to specific verticals or industries. This information will better equip your company to target these markets' demands. CAB members may also know colleagues and be able to refer you to them. Make it a goal to gather referrals from your CAB members. Talk about ROI: One sale here could pay for your entire CAB program for a year or more.

5 New Markets

Strategic discussions can help identify net new customers or markets that might benefit from your offerings or services. If your company plans to enter a new market segment, consider leveraging CAB members to identify new target prospects and

increase the overall prospects in your database. Set a goal of increasing overall prospects in your database by 10 percent.

6 Product Feedback and Direction

A top benefit of any CAB program is the valuable input members share about your existing products, how they are implemented and used, and the sometimes surprising benefits they provide. They will also provide critical feedback on your product roadmap—the new features and capabilities they'd like to see, as well as those they regard as lower priority or even unnecessary.

While such prized information can focus or save untold amounts of product development cycles, such benefits can be difficult to quantify with specificity, which is why we recommend that CAB managers create product goals tied directly to their CAB programs. For example, uncover one (or more) new product feature(s) to add to the roadmap. Or, discover a new product concept that addresses your CAB's largest unmet need. Perhaps a CAB member might even volunteer to be a beta tester of this new product. You could track the sale of these features or products, and attribute that revenue directly to your CAB program.

CAB managers who are unprepared to share their concrete successes when they face budget scrutiny risk losing their program.

7 Testimonials

In this age of social media and pervasive product and vendor reviews, recommendations by colleagues and peers carry more weight than ever. CAB members consist of your best, most dedicated customers and represent firms that are not only successfully using your products, but may be doing so in innovative ways that add incremental value to your other customers and to your company's P&L.

Make a goal to procure one to three testimonials from your CAB program. These can be simple written blurbs on your website or, even better, a video testimonial to share. Plus, since CAB members are typically high-level executives, you stand the best chance of getting their company's approval on these and any other marketing activities.

8 Speaking Slots

We've seen CAB members present their successful—or novel—use of a product at CAB meetings, industry events and even user conferences. These presentations are quite effective, as attendees often respond more positively to endorsements from one of their own rather than vendor presentations. These customer speakers can be equally powerful at internal meetings. They describe not only their successful use of your product, but why they selected it over a competitor's product, and how their company plans to grow with it. This provides valuable intelligence for your account teams.

Set a goal of identifying one to three CAB members who would be terrific spokespersons for your product. Take the extra step to integrate them into your marketing program. Then track their speaking engagements, as well as the audience in the sessions in which they present.

9 Press Releases/Case Studies/Webinars

Ask your best CAB members to issue press releases on their successful use of your products—perhaps as beta purchasers or when key milestones are achieved. Case studies can provide richer details around their situation and results of using your solution while serving as valuable sales tools for your prospects. Or perhaps your customers would participate in a webinar to discuss their trials, failures and ultimate triumphs using your solution.

Make it a goal to include a CAB member in one or all of these marketing initiatives. And be sure to track press release impressions or clicks, case-study downloads and webinar attendees. Imagine how your CAB ROI will skyrocket if any of these prospects turn into paying customers.

10 Thought Leadership

Many of the boards we manage end up creating impressive collateral that reflects the collective experience and thinking of that board's member output; for example, a white paper that provides guidance on an industry challenge affecting many companies, suppliers and vendors alike. Such thought leadership can garner industrywide attention from press, analysts or bloggers, and positions the host company as a sought-after expert resource on that issue.

CAB managers who are unprepared to share their concrete successes when they face budget scrutiny risk losing their program, even if that program is actually quite successful. The key is to establish tangible goals from the onset and track those goals as the program evolves. PM

About the Author

Rob Jensen is vice president of marketing for Ignite Advisory Group (igniteag.com), a consultancy that helps B2B companies manage their customer and partner advisory board programs. Rob has more than 20 years of experience in marketing, communications and business development leadership positions with leading enterprise software and technology companies. Rob has successfully overseen groups that generate global awareness, increase lead generation and enable sales teams. In addition, he specializes in initiating, managing and facilitating customer and partner advisory board programs in the U.S. and abroad. Contact him at rob.jensen@igniteag.com.

THINK LIKE A MILIT TO GROW

ONE NIGHT IN DECEMBER 2015, a 110-foot Coast Guard patrol boat was 150 miles off the coast of Mexico when it received orders to interdict a drug vessel. The night was pitch black.

Overcoming the dangerous sea conditions, the patrol boat managed to surprise and detain the smugglers without a shot being fired.

The 18-member patrol boat crew had to transfer over 7,000 pounds of narcotics from the drug vessel into their boat while bouncing in rough seas. The smugglers and the drug vessel had to be towed back to San Diego. The crew displayed remarkable creativity and courage in accomplishing their mission.

The executive officer of the patrol boat was 25-year-old Coast Guard Lt. j.g. Daniel Trainor. He was a seasoned leader at an age when most product management professionals are just getting their feet wet.

No single career path leads someone to a career in product management. Backgrounds in marketing, sales engineering and program management are common starting points, but none guarantee a path to success.

The military route to product management is less common, but it brought Charlie Baker to the field almost 20 years ago. Charlie's background includes Air Force Academy training, program management roles on active duty, an MBA and a product management career across multiple technologies. He has known Daniel Trainor for most of his life and watched the young scholar-athlete become a Coast Guard Academy graduate, officer, leader and then a budding product manager.

During a Boston-area networking forum, the two men discussed the advantages a military background provides for pursuing a career in product management. They identified six takeaways from their training as military officers that could benefit product management and marketing professionals from any background.

1 Take advantage of training.

Military officers are trained in the right processes and procedures for every known circumstance. They practice repeatedly to ensure they can lead teams under enormous pressure. They learn to make plans that are adaptable to changing situations, which can mean the difference between success and failure.

Key Takeaway: Participate in every available training opportunity. Then practice repeatedly under the watchful eyes of a coach or mentor.

2 Become a generalist before becoming a leader.

Changes in station and promotions force military officers to constantly adapt to new situations and learn new skills and technologies. Prior to becoming an executive officer, Daniel had four jobs in five years. This exposure prepared him for leadership.

Key Takeaway: Expose yourself to a wide variety of roles within product management and marketing. Gain experience in as many of the 37 boxes in the Pragmatic Marketing Framework as possible early in your career to help prepare you for leadership.

TARY OFFICER
V REVENUES

BY CHARLIE BAKER AND NEIL BARON

3 Learn from and leverage a variety of sources.

Senior enlisted personnel have a better understanding of internal processes, procedures, technology and how a boat operates than a 25-year-old leader does. Although Daniel was not the technical expert, he was the decision owner. He needed to be humble enough to realize that he didn't know everything and be open to input from all sources when making every decision.

Key Takeaway: Remain open to ideas from a variety of sources and seek the technical expertise you need to make informed decisions. Get to know the product architects, longest-tenured developers and support team. They are the experts who will provide a unique view of requirements and features. It can be especially valuable to get input from outside your team or from those new to your product. As you elicit feedback, be sure to reinforce the roles and responsibilities of each group so that expectations align.

4 Display empathy.

An executive officer oversees a crew with a variety of skills and experiences. During active duty, Daniel made a point to sit with the various people under his command. He wanted to understand them on a professional and personal level. He recognized that he needed to communicate differently with an 18-year-old rookie than with a seasoned veteran. An ability to translate orders into relatable language was a key to his success.

Key Takeaway: Take time to walk in the shoes of your fellow employees and customers. Just as Daniel spent time sitting with and observing his team doing their jobs, spend time observing and listening to your customers. Remember that "thank you" and simple recognitions go a long way.

5 Be resilient.

Daniel and his crew were in rough seas miles off the coast of Mexico in the middle of the night, pursuing a drug boat loaded with illegal narcotics. They were in an operational environment where they couldn't hit pause, reevaluate or give up. Despite the obvious challenges, Daniel remained calm and focused on the big goals. He united his crew to work as a team to overcome the obstacles. They successfully intercepted the drug vessel, safely transferred the crew and contraband onboard the patrol boat, and engineered a way to tow the vessel back to San Diego. The mission wasn't successful because of a perfect plan, but because Daniel relied on an "adapt and overcome" mindset as the plan evolved.

Key Takeaway: Be realistic about your situation but find ways to overcome the challenges. Remember your plan, but remain flexible so you can adapt as the situation changes and you gather additional information. Every product professional faces obstacles, and while there may be justifiable reasons for pulling the plug on a product or project, truly great product professionals will distinguish between valid reasons and excuses.

6 Make decisions.

Daniel faced decisions every time the ship went out to sea. In dark, rough waters, he made the decision to board the drug-running boat. He used a limited timeframe and available information to make his decision and put the whole crew's effort behind it.

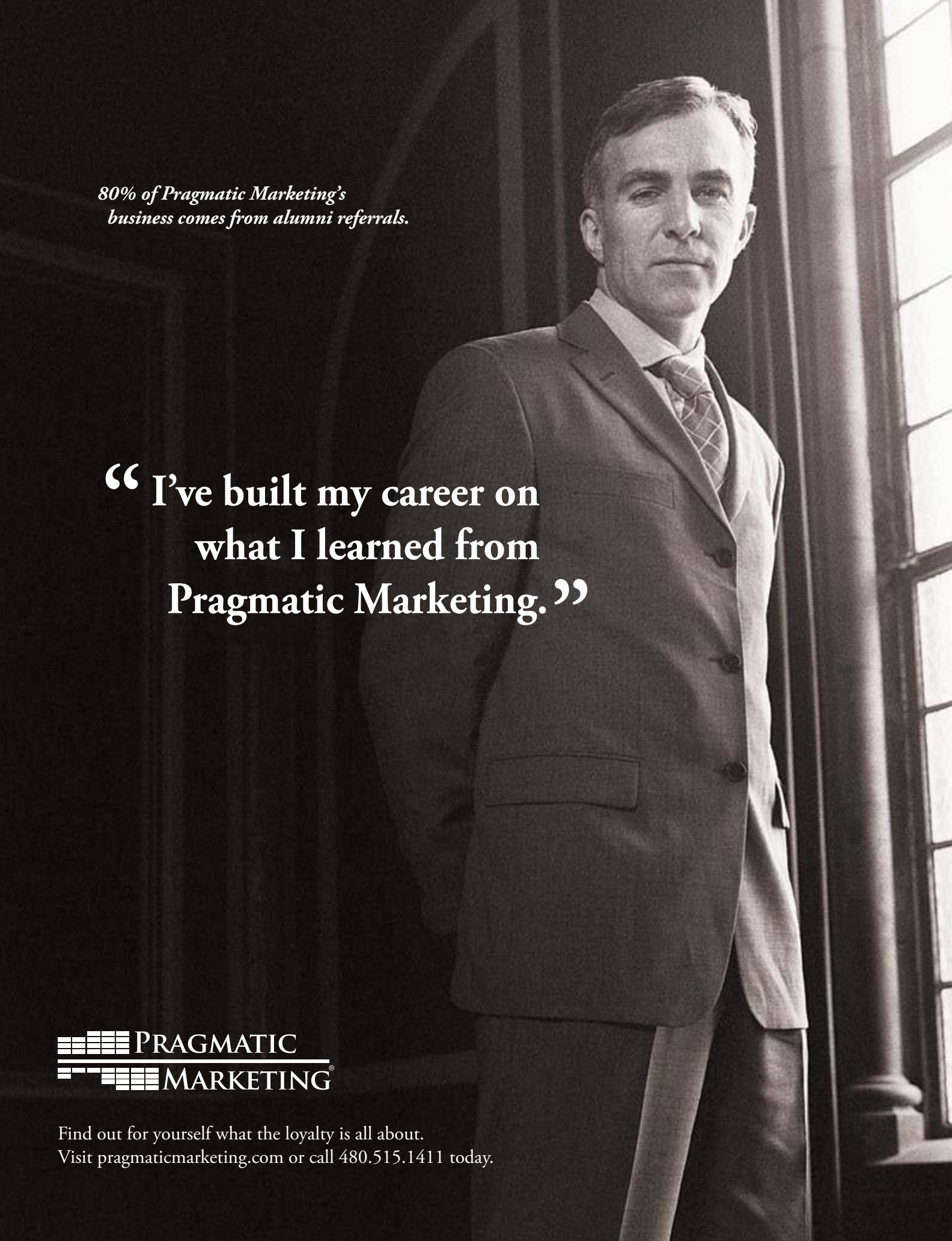
Key Takeaway: You will deal with limited information, resources and control every day. Embrace the ambiguity. For every key decision, define the criteria, set a timeframe, gather information and then make your decision. In the words of Gen. George S. Patton: "A good solution applied with vigor now is better than a perfect solution applied 10 minutes later."

Although you may not have come to product management from a military background, take a page from these six takeaways and learn how to become a more successful product professional and leader. PM

About the Authors

Charlie Baker, senior director of product management, oversees the roadmap and strategic direction for infrastructure-as-a-service edge services at Oracle. In addition to his career in product management, Charlie served in the U.S. Air Force and assisted with design, upgrade and deployment of space defense and optical telescope systems. He is a graduate of the U.S. Air Force Academy and earned his MBA from Boston University. Follow Charlie on Twitter at @charliebakerjr. The views Charlie expresses in this article are his own and do not necessarily reflect the views of Oracle.

Neil Baron is an internationally recognized authority on selling and marketing innovative products, services and solutions sold to risk-averse customers. He has served in a variety of senior marketing and management roles at companies such as IBM, Digital Equipment Corporation and Sybase. He is passionate about involving customers throughout the go-to-market process. In 2009, he started Baron Strategic Partners, a consulting firm that helps organizations launch groundbreaking products and services and reenergize older ones. Contact Neil at nbaron@baronstrategic.com or baronstrategic.com.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You Attended Pragmatic Marketing Training, What's Next?

BY JOHN MILBURN

AFTER 10 GREAT YEARS AS AN INSTRUCTOR WITH PRAGMATIC MARKETING, I left to become an independent consultant. I now assist companies who need help with their product strategy, who need better organizational alignment or generally want to become more market-driven. Over the past year, I have had the privilege to work with several companies, and I now have an even greater appreciation of the challenges that many of you face. Here are a few high-gain activities that can help you be more successful implementing what you learned in a Pragmatic Marketing class.

LEARN TO SAY "NO"

MISS SOME MEETINGS. DON'T CLEAR OUT YOUR INBOX. FOCUS ON THE RIGHT THINGS.

Stop Making Stuff Up

Customers, user observation, surveys, industry analysts, advisory boards, Confluence data, win/loss reports, trade shows—you have many sources of market data that drive your plans. So why does it still feel like you are making most of it up? My observation: Your schedules are overloaded and too many decisions are still being made by those who are not "in" the market.

Look at the calendar of any product team member—every day is usually double and triple booked. Where do you find time to sense the market? Learn to say "no." Miss some meetings. Don't clear out your inbox. Focus on the right things. Tools can help: Aha!, ProdPad and ProdPlan are a few. But a tool is not the answer to becoming more market-driven. Without the necessary time in the market, without the time to analyze what the market data tells you, a tool will just document your opinions and ignorance.

If you want credibility with executives and investors, reference a customer and a unique problem that you could solve. The fastest way to prioritize a backlog is to have the hard market evidence that defends your prioritization. The best way to enjoy this crazy occupation you've chosen is to go immerse yourself in the market, not to attend another meeting.

Clarify Product Roles

Why is this still a question today? Pragmatic Marketing has taught over 150,000 alumni that the market-driven product professional is:

- The messenger of the market
- The CEO of the product

Simple, straightforward, to the point. But, implementation is not quite as easy. Gnarly questions pop up, like these: Who prioritizes the requirements in the backlog and defects from the support team? Who calls and runs the daily team meetings? Who answers customer questions? Who attends every daily standup meeting? Who reacts to customer issues or product defects? The list can go on and on. It is getting harder for this single role to stay in touch with the market, define a winning strategy and support all of the other departments that are involved with the product.

The introduction of the product owner role is a great improvement over older, waterfall processes, where requirements were often thrown over the wall to development. There was much less interaction between the development and product teams than there is today. But as the needs of your development teams increase, it is imperative that you share the load.

Can a product manager also play the role of product owner in your company? Google it. Many people much smarter than me have stated their views and opinions. There are pros and cons both ways. The key, I've found, is in setting the right expectations in the organization, and then determining if you have allocated sufficient resources to meet those expectations. I am not saying that you must have a different person for each role, but leadership needs to be aware of the time demands of trying to do it all, so that the team is not constantly missing everyone's expectations. Simply put, you must clarify who will act in the following roles:

TEAMS TODAY ARE BUSY BUILDING STUFF, BUT THEY OFTEN HAVE LITTLE IDEA IF IT IS THE RIGHT STUFF.

The voice of the market to the business
Primary outputs: market research, business proposals and plans, competitive strategy, roadmaps, positioning, partnering strategy, goals/epics

The voice of the market to the development team
Primary outputs: user personas, requirements, priorities, market updates and feedback

Streamline Your Product Lifecycle

Startups and mature companies all have some form of product lifecycle (PLC) process. Products get defined, built, delivered, updated, supported and, eventually, are either absorbed by something else or achieve end-of-life status. Companies whose products are delivered in a more continuous delivery method usually have a shorter, more nimble PLC, with fewer steps and documents. Conversely, hardware companies or software companies that release their products less frequently have more of both.

Teams today often regard PLCs as "too waterfall" or "too much process." It is hard for me to argue with that when I see how many steps and gates have been defined, how many documents are mandated and how many meetings are being held. So why, with agile or scrum, do companies still need a PLC process? So that everyone else can do their jobs! Executives and finance need a PLC to set their budgets and to estimate company revenues, cost and value. Human resources needs a PLC to know what resources are needed and when. Sales needs a PLC so that they can train reps and set quotas for the product. Marketing needs a PLC to update collateral, tools and web content.

Yet many of the PLCs that I see today are outdated and rigid, with too many steps. Audit your PLC. Look for ways to increase both the efficiency and effectiveness. While there is no standard, one-size-fits-all PLC, here are some areas to consider to improve your PLC.

- Standard, lighter-weight strategic roadmaps and business plans earlier in the process that clearly set the business objective and project expectations
- Crisp, short and scheduled updates to leadership from project kickoff through delivery
- Improved market requirements documents (MRDs), or, since most teams are using requirements management tools such as Jira, the complete removal of MRDs
- A release or launch manager role to ensure that as development progresses toward the product release date, others are working back from the date to get all other aspects of the launch completed on time with high quality. We don't ship if support hasn't been trained. We don't ship if user acceptance tests have not been completed. We ship when the product and everyone involved with it are ready.

Document Your Strategy and Business Plans

Too often I've heard, "We don't do business plans anymore" or, "Strategy? I think our executives have one, but I'm not sure what it is." Alas, teams today are busy building stuff, but often they have little idea if it is the right stuff. Businesses still need a set of prioritized and well-articulated strategic and product objectives that drive corporate investment. Everyone in the organization who has a need to know should have access to them. Here are some things you can do to help.

- First, build a retrospective roadmap to set the context and perspective about how your product has progressed over the past 12 to 18 months. Releases, revenue, clients, headcount, markets, wins, etc.
- Next, build a roadmap that shows your strategy and vision for the future. This should not look like a list of the features that you want to deliver in a given timeframe; rather, it should define the objectives around the markets you plan to capture, the competitors you intend to beat, the users you want to win over and the business expectations/metrics for the product.

Well-written requirements answer who, why, when/how often and what.

THEY SHOULD NEVER ANSWER HOW.

- Review and update each product's business case at least annually. This is not a check-box item, but a thoughtful review of the health of the product and an evaluation of whether you need to make changes in your investment.
- Finally, if your organization is becoming siloed in its plans and metrics, ask the question, "Who owns our cross-product strategy both from the business/marketing and technical perspective?" Also find out whether your PLC includes the necessary checks and balances to ensure that you are leveraging your strengths across all projects, and not creating competing products.

Manage Your Requirements

Are you managing the requirements, or are they managing you? These eight tips will help you take charge.

1 Remember that the customers for your requirements are engineering and development teams. The level of detail and the cadence for which you deliver your requirements will vary a great deal based on their needs. Ask them. Observe how they use the requirements. How can you increase their customer satisfaction?

2 The industry has moved to a more contextual, more user-focused method of writing requirements. The standard best practice is no longer "The product shall …" but "As a < >, I want to < >, so that I < >." In this transition, make sure that you are writing requirements, not high-level epics or goals. Good requirements provide engineering with enough detail about the problem that they can begin engaging in healthy conversations around designs, estimates and skills.

3 Most products today have both functional and non-functional requirements. Functional requirements are best written as user stories or usage scenarios. Non-functional ones set specific constraints or standards that the product must meet to be marketable (e.g., compliance, performance, platform, security, size, cost). Have the conversation with your team and agree on how to document, prioritize and group your requirements.

4 Product management defines and validates user acceptance. User acceptance tests are not QA, which typically answers questions like: Does it run? Does it operate with the correct inputs and outputs? Does it fail under stress? User acceptance validates that the product solves the market or customer problem as documented in the requirement.

5 User personas give requirements the human context. You should grok the user and communicate those attributes to front-end and back-end developers. Bring in others from the organization that have this insight to help you. User experience (UX) professionals have been trained in this; if you have them, let them define the user personas. And, don't forget sales engineers, trainers and technical support, who can all provide insight to the different user personas and their problems. Spread the load!

6 Development tasks, system designs and specifications are the domain of the engineering team, not product management. Well-written requirements answer who, why, when/how often and what. They should never answer how.

7 Details in requirements evolve throughout the life of the project. You should provide finer detail and granularity as the team gets closer to doing the development work. Product management needs to keep the requirements pipeline (a.k.a. backlog) primed and filled well ahead of sprints.

8 Define a process for dealing with reactionary customer or organizational demands that can derail the team. It is extremely difficult to define a team's velocity when they are constantly being redirected to work on the one-offs or the must-fixes that take development time away from the product. Good scrum masters can help here.

Make It Actionable

Pragmatic Marketing has outstanding training courses with experienced and talented instructors. They teach many valuable concepts. But, your ultimate success will not be measured by how many courses you've attended, but by how you were able to make your company more successful after the training implementing the concepts. These tips can help you do that. What works at one company may not work for yours, and you may just need some outside, objective advice. There are many consultants in the industry to help you with auditing these and many other areas of your product management and PLC processes; get some outside help if you need it. Just make sure it happens. PM

About the Author

John Milburn is CEO of Practical Growth Strategies, LLC, where he and his team help companies apply and implement market-driven principles. Prior to this, he was an instructor at Pragmatic Marketing and has held executive and individual contributor roles in development, sales and product management from startups to Fortune 100 companies. Email John at jmilburn@practicalgrowthstrategies.com.

A PRAGMATIC APPROACH

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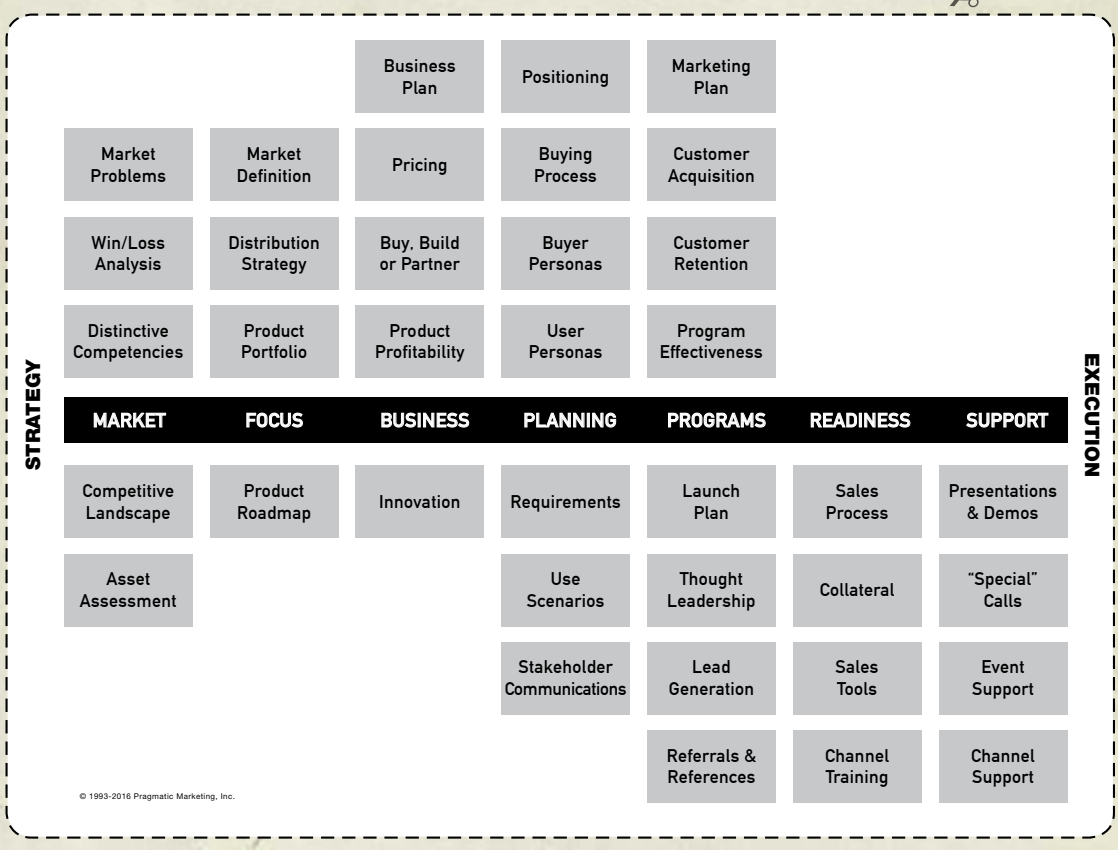
How to Succeed in Technology

A STEP-BY-STEP GUIDE:

1. Cut out framework, avoiding pesky paper cuts.
2. Post conspicuously throughout office.
3. Follow framework faithfully with peers.
4. Reap the benefits of being market driven.
5. Rinse and repeat.



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