How to Ensure the Product You Develop Today Will Still be Relevant in the Future

EUREKA SOFTWARE

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Introduction

Today's products are smart and getting smarter. From wireless consumer devices designed to enhance our daily lives to complex industrial systems that monitor and manage everything from manufacturing to healthcare, growing numbers of products generate and consume an enormous amount of data.

In recent years, software has accounted for an increasingly substantial portion of product development projects. New IT and computing ecosystems such as the Internet of Things (IoT), machine learning, and artificial intelligence (AI) are all driving product software and integration to new heights. Moreover, consumers are increasingly less interested in stand-alone devices and products with limited functionality. They want products that collectively operate as an integrated whole; a network of components that talk to each other and provide seamless, convenient, intuitive multi-functionality.

Attempting to introduce a new product into this complex world of hyper-connected, software-driven products can be daunting. How do you ensure that the products you envision today and build for tomorrow will still be relevant in the years to come? Disruptive technologies have shown us that we cannot predict the future and absolutely guarantee a product's viability and value in the years – or even months – to come.

However, there are four foundational principles of software development and management – metrics, monitoring, analysis, and investment – that have a direct and significant influence on the success of any technological product. This Executive Guide provides insights into those four guiding principles to help ensure future product relevancy in the face of rapid change.

CHAPTER 1

The Importance of Metrics

It is virtually impossible to overestimate the importance of metrics in the lifecycle of any product. Metrics, quite simply, tell you what's happening with your product. Metrics, of course, will vary from industry to industry, product to product, and market to market.

For example, if it's a social platform, you'll be interested in engagement numbers, if it's a business intelligence (BI) tool, you'll want to know how efficiently things are running. What makes any set of metrics so important is that they tell you what users are doing with your product — and users are the ones who will steer your product's evolution. Unless you know how they are interacting with it, how they want to use it, and what's important to them, you can't make good product decisions to keep it viable.

Metrics, regardless of your product or industry, can be divided into two major groups: long-term (strategic) and short-term (tactical or actionable). Long-term metrics are those used to measure the strategic business aspects of your product's usage — how is consumer demand or the competitive landscape changing for your product? Short-term metrics are valuable for making product modifications based on user feedback about a specific problem, feature, or function. These metrics might be used until a specific issue has been resolved. Or they may be used to gather predictive information that will enable you to make early course corrections with your product to head off potential problems before they arise.

If you're new to metrics utilization, or you need a refresher, there are five basic steps to developing metrics:

1. **Define the metrics.** To get the most from your metrics keep them simple, understandable, and relevant. One proven method to keep your metrics on track is to use the SMART methodology — make them Specific, Measurable, Achievable, Relevant, and Time-based.

Selecting the right metrics is crucial for both successful product development and to help ensure that your product stays relevant and valuable in the future.

2. **Understand the data you need and how to collect it.** It's one thing to know what data you need, but it's quite another to figure out how to get it. It's vital to be able to collect data that's consistent and reliable so that the analysis will be accurate and valuable.

3. **Get buy-in.** Metrics won't work unless you have buy-in from all of the product's stakeholders. Everyone needs to agree on what you're measuring and why.

4. **Measure and share results.** Data is not the same thing as knowledge. If you're going to take the time to establish metrics and collect data, it's important to then analyze it and share the results to ensure that your product continues to perform as it should.

5. **Update your metrics.** Any metrics need to evolve over time, based on market conditions and your product's lifecycle. After all, how can you accurately assess your product's fit in the marketplace if your metrics are outdated?

Selecting the right metrics is crucial for both successful product development and to help ensure that your product stays relevant and valuable in the future. Remember to keep the number of metrics manageable — a half dozen or so — and revise or replace them when they're no longer effective.

CHAPTER 2

Product Management & Monitoring

When we refer to product management and monitoring, what we're really talking about in many respects is the process of continuous improvement and the importance of always having hands on the product.

It starts at the very beginning of product development. It is much more efficient, from a time and effort standpoint, to work with existing standards, development tools and techniques. For example, there's no need to create a unique authentication mechanism when there are proven solutions already available for your product. Pick technologies with good technical community support that you know will ensure their viability for some time to come.

Going hand-in-hand with embracing proven product development and capabilities solutions is using solid engineering processes. You want to know how you're going to evolve your product and be deliberate in that process. It's important to have repeatable procedures for your releases and be able to add product capabilities in a refined and predictable fashion.

Engineering Processes

Good engineering processes and the right tools are crucial for building a solid, robust piece of software that's scalable and can stand up to the rigorous use of hundreds or thousands of users over time. However, it's tempting for software developers and programmers to take the easy route and create a prototype that does the job and looks good in beta but when it gets rolled out in production and achieves massive use, things start to go wrong. Time and money get wasted retooling and rebuilding a fundamentally flawed product. The importance of taking the time and making the effort to build it right the first time cannot be over-emphasized.

Operations

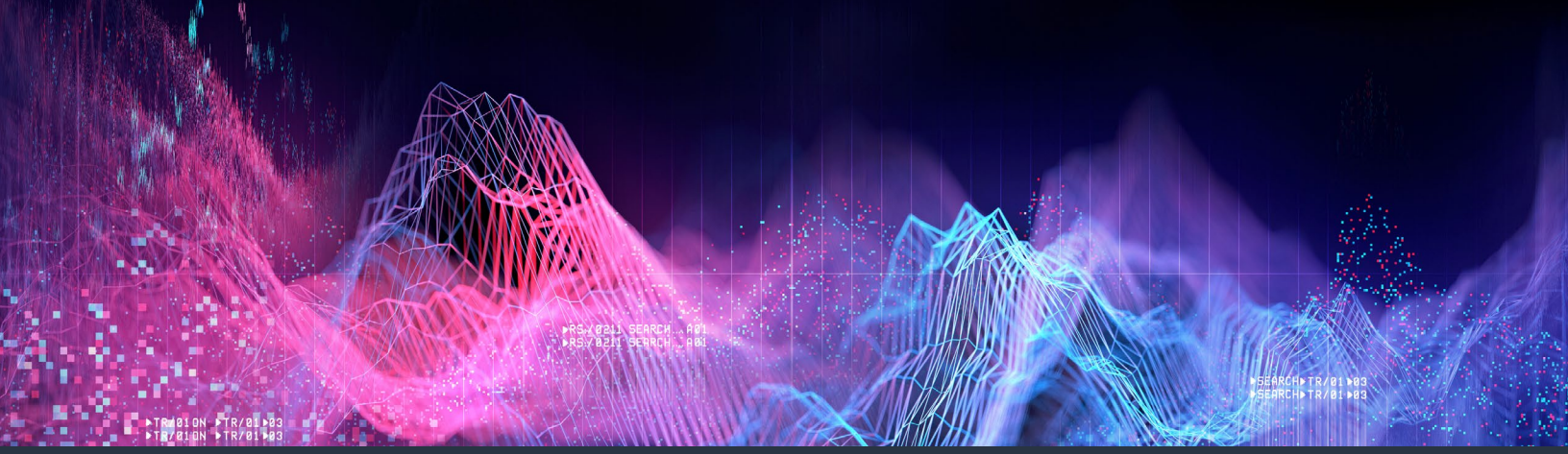
The involvement of the engineering team should extend to operations as well. Operations departments are uniquely suited to managing and maintaining platforms that supports fairly complex products. Many companies roll out complex products with little thought about how to adequately support them after launch and what to do if they break. Engineering's role in product management puts them in a position to respond quickly to problems.

It helps to build a feedback loop into the engineering process so that you're constantly looking at what's working, what's not working, and integrating customer feedback into a continuous improvement process that's responding to market conditions and not simply fixing mistakes or redesigning the product in response to past efforts.

Governance

Guiding the hands-on aspect of product management is something called governance, which establishes accountability and traceability. It sets guidelines for who does what, when, and why. Governance allows engineers into the production environment without compromising data, risking compliance problems, or creating regulatory issues. Good governance practices and robust engineering engagement in product management can contribute significantly to ensuring a viable, relevant product that will retain its value into the future.

Product management best practices places a priority on analytics (more on that shortly) and utilizing them to understand what's happening with a product over time. One of the greatest challenges in product management is not focusing on the user experience. Concentrating on user issues and actual product usage will enable you to discover new or improved capabilities that can improve the user experience, increase customer loyalty, and extend your product's life.



CHAPTER 3

The Role of Analytics

If metrics are the vehicle that drives product development, then analytics is the gasoline that provides the power. Without analytics, the information generated by metrics is just a pile of data.

Analytics is crucial to product management for one significant purpose: product improvement. Without the measurements taken by metrics and the insights provided by analytics, product teams will not know how well their products are meeting the needs of users. They cannot make informed decisions about upgrading product functionality or adding capabilities. And if they make changes to the product without measuring and analyzing the results, they'll have no idea if the revisions implemented are effective or even necessary. They would be operating in the dark.

Analytics plays five important roles in product management:

1. **It helps provide insight into the user experience.** Understanding user needs and behavior isn't relegated solely to the realm of marketing. Product teams can use analytics to understand why users are buying their product and how they are using it.

2. **It can measure product progress.** Analytics can inform team members about which features are working and which are not. If revisions and adjustments need to be made, analytics will tell them if the changes are actually solving the problem they are meant to address. Analytics can play a critical role in creating an accurate product roadmap that can tell you where your product is currently, where you want it to go (what you want it to be), and how to get it there.

Analytics can jumpstart innovation and help product teams provide the kind of improvements that can help an existing product remain viable for an extended period of time.

3. **It can verify product ideas' viability.** A variety of analytics tools can verify product concepts, helping developers test, learn, adjust and retest to speed up the product design and launch process.

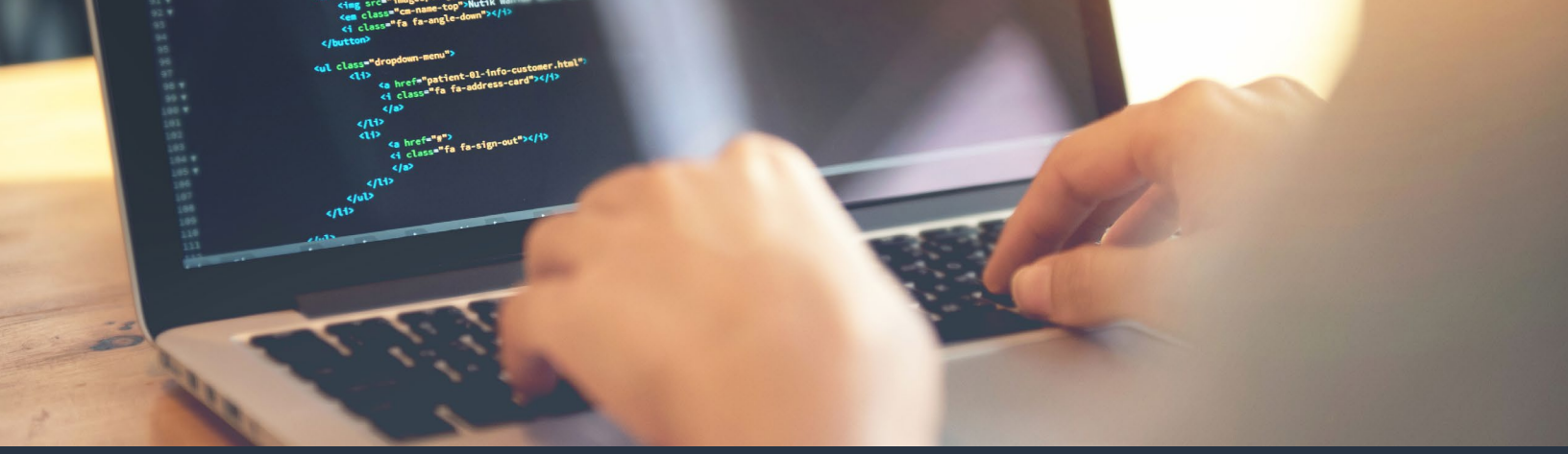
4. **It turns quantifiable data into knowledge for informed product decisions.** There was a time when product development was a "fly-by-the-seat-of-your-pants" process that involved more guesswork than data-backed, informed decision-making. Analytics has made decision-making more objective, reliable, and faster. While intuition based on experience and expertise can still play a valuable role in product development, it can — and should — take a backseat to objective analytics.

5. **It fuels inspiration for further product developments.** Analytics can jumpstart innovation and help product teams provide the kind of improvements that can help an existing product remain viable for an extended period of time. It's important to note that quantitative data, by itself, cannot extend the shelf-life of a product. Quantitative analytics, used in conjunction with qualitative techniques, can provide a more holistic view of a product to help product management teams make the kind of focused improvements and adjustments that will help maintain that product's value and improve its longevity.

It may surprise some to learn that, despite the spotlight brought to bear here on the product development side of analytics, that is only half of the analytics story. The other half concerns overall business strategy and the need to balance analysis of the business side with the technical side for an even broader holistic view of the organization.

This analytical yin and yang is often overlooked by manufacturers as well as outside product consultants retained to help companies innovate new products. But to ignore the business context of product development and management invites failure. You cannot launch and grow a successful product without understanding the business environment in which it exists. Any product development consultant worth their salt will insist upon business and market analysis to develop a picture of where the client company stands in relation to their competition, the marketplace in general, and their own ability to successfully go-to-market with the product under consideration.

Over the past decade or so, data generated by metrics and the analytical tools used to tease insights out of it have transformed product development and management. While some product team members may lament the demise of "seat-of-the-pants" engineering, the reality today is that without data and the analytics to understand it, effective product development and successful product management are simply not possible.



CHAPTER 4

The Importance of Investing in Software

With so many products today being driven by software, it's easy to see why some manufacturers treat software as just another product development expense to get the product up and running and out to market. But that would be a mistake.

Instead of thinking about software as a short-term solution to launch a product as quickly as possible with minimal expense, think of it as an investment. Stop using software as a quick cure-all — "let's pour a little magic software sauce on this problem to make it go away" — and instead step back and think hard about what it is you want the product to do, why you want it to do that, and where you want the product to be in three, or even seven years. Yes, it will probably take more time and money to build a more robust, versatile solution, but you will be giving your product a better chance for extended viability in the long run and gaining a greater return-on-investment (ROI) because your software will need less patches and upgrades.

Software as an investment has ramifications far beyond simply providing your product with a better tactical advantage. From a broader perspective, your software could have the potential of becoming a real market disrupter, so it's crucial to consider the business implications as well as the technical ones of your product development and management activities. What short-term and long-term impacts is it having on the marketplace? How is your competition responding? What trends are — and might — affecting its adoption and use? What actions should you be prepared to take to evolve your product to meet market demands? Answers to these questions and more will have a profound affect upon the future viability of your product.

If you're considering shifting your software product development strategy from a minimum viable product approach to one that results in a more robust, versatile and flexible product, here are some recommendations to improve your chances for success:

- **The user comes first.** Good product design should always consider the user experience (UX) first. It's important to look at user issues from a variety of perspectives and carefully consider their point-of-view. Product applications should be intuitive, easy-to-use, and enjoyable. The best software is the software users don't see.

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- **Keep it simple.** Just because you might be able to cram a lot of features and capabilities into your software doesn't mean you should. Do not confuse "simple" with "crude." A simple application that does just a few things elegantly, reliably, and well is far better than a multi-tasking monstrosity that does many things inadequately.
- **Know what you don't know.** Humans have a tendency to push uncertainty to the back of their minds. We put off things that we don't know about. Instead, drive uncertainty to the front and focus on solving those issues early in the design process to avoid having them come back and bite you later when it may be more time-consuming and expensive to deal with them.
- **Consider unlikely alternatives.** When developing software it's easy to see all issues as software problems. In reality, there may be other influencing factors affecting product design such as electromechanical limitations, marketing decisions, and competitive pressures that actually require a non-software solution. Don't become a victim of narrow vision. Think of it this way: when your only tool is a hammer, every solution looks like a nail. Consider alternatives that may not immediately come to mind.

A Roadmap for Viability

There is perhaps no industry that evolves faster than software. Companies race to introduce new versions for a marketing boost as much as a technological one. It has been reported that Amazon introduces new code every 11.7 seconds. How can any product hope to remain viable for any length of time?

There is no reason to fear the future. Manufacturing in general has learned how to adapt to the ever-accelerating pace of technological change by adopting lean and agile business models that help organizations pivot quickly and aggressively when markets and competition change. This lean and agile approach is being adopted by savvy software developers on a more tactical level to speed up and improve product development. Sensible, sustainable development can create software that is both seamless and intuitive for optimal UX and modular for fast, efficient, and cost-effective upgrades. Coupled with more robust customer feedback loops to ensure continuous improvement, this approach will help ensure that well-designed products continue to be viable well into the future.