

The Holy Grail of Design Measurement

To measure Design, don't build just another measurement system.

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The Holy Grail of Design Measurement

To measure Design, don't build just another measurement system.

Companies are looking to better measure and manage innovation, and they can.

Companies around the world are striving to become more innovative in order to better compete in today's global, networked, and fast-moving society. As a result, innovation and design managers are working their way up the corporate ladder and into executive board rooms. But once these leaders arrive, many companies realize that both design and innovation are harder to nail down and quantify than sectors like procurement, operations, and finance. As a result the process of innovation is mysterious for many companies and designers are stymied by the limited impact they're having on business decisions.

In fact, it is possible to more effectively manage and even measure the design and innovation process. HP and Jump have been collaborating on a philosophy and plan to help HP quantify, and therefore value, the business impact of design. Together, we have developed a system that straddles a flexible middle ground between strict performance measurement and the creative process. Central to our approach is considering not just the desired outcomes of such a system, but designing for the system's use by product development teams.

While it's long been difficult to measure design's contribution, we are forging new territory at HP. Measuring design's impact on our business helps to clearly communicate design's value throughout the organization and, as a result, successfully sets up design to be used as a strategic business tool.

Superior technology and operational efficiency are no longer enough.

Today, while companies continue to innovate through technology, it's important that they innovate through other means as well. To ensure continued growth, HP is using design as a business tool to move

beyond the high-speeds-low-price race, and into a new proposition that considers what truly matters to our customers.

Similarly, operational efficiency has become table stakes. Quality and process control are now a given. Tools like Six Sigma have been in widespread use for more than 20 years, and, while they help protect HP's bottom line, are not enough to lead to the kind of innovation that sets HP apart from the competition.

We're moving into the age of big D Design.

Industry is learning to see design as an engine for real differentiation and organic growth. The business press has begun to recognize and report the role which design has played in many corporate success stories. As major magazines and newspapers explore the positive financial impact of great design, they're shedding light on the ways companies set their products apart through the strategic use of industrial design, experience design, design research, and planning. HP frames this as "Big D Design" because design is moving from being a styling job tacked on to the end of the product development cycle, to a strategic approach to product development that has impact at multiple business levels. As we move towards Big D Design, it's evermore important to thoughtfully harness design and communicate its value in business relevant terms.

For example, in the last few years HP has leveraged design across its printer lines to not only produce a consistent look and feel for its printers, but to streamline the development process and address supply chain issues as well. This strategic use of design has saved millions of dollars in tooling, and cut the design phase of the development cycle by a third. As a result of initiatives like these, design is becoming a critical business tool at HP and an integral part of HP's strategic conversations.

At HP, the development of a design measurement system is leading to increased confidence about the strategic use of design at the senior leadership level, by aligning design contributions with key business

outcomes. At the project level, using a design metrics system enables teams to make better informed and timelier decisions throughout the project cycle. This suggests two main goals any effective design metrics system should strive to achieve.

1. Metrics should help set up design and innovation teams to be part of the larger strategic conversation.

To help demystify design and innovation, a metrics system should reassure its stakeholders by providing structure for an otherwise nebulous process. This system should also communicate value and quality by linking the innovation or design team's actions and efforts to the outcomes they've achieved. Linking actions to outcomes enables better informed design and innovation investments in the future, provides rationale for bigger design budgets, and opens the doors to more strategic conversations within our business.

2. A good metrics system should also add value to the project work itself.

Instead of giving design and innovation teams yet another task to do, a design measurement system should help organize what the teams are already doing, and help allocate resources and work-stream activities. It can do this by providing a framework that creates alignment between stakeholders at the onset of the project and helps articulate priorities and goals. As the project unfolds, the information that comes out of using this system should help inform and influence the decisions that are important to the success of the team.

An innovation metrics system needs to be tailored to the creative process.

Innovation projects typically include exploration and uncertainty, and concrete outcomes are often unknown at the outset – even when teams begin with a set of clearly articulated goals. Ambiguity, dead-

ends, and iteration are part of the creative process and need to be factored in. This requires space, time, and flexibility.

This kind of flexibility to explore is built into the culture at companies like 3M, Google and within our own HP Labs. Employees are encouraged to take time to tinker and explore new ideas. Innovation projects need to allow similar latitude for this kind of exploration and provide opportunities for course correction, as when new insights emerge. For a measurement system, this means that the work-stream activities a development team chooses and the in-process metrics it uses to manage the project should be allowed to emerge dynamically with the innovation process. Allowing teams to set up measurement systems that make sense to them and their process will help set up the project and the team for constructive work and ultimately, success.

A system for measuring innovation needs to be flexible, but built on a solid frame.

To allow for this kind of dynamism, a measurement system seeking to enhance the innovation process needs to have some elements which are fixed and some which are flexible. Fixed elements are needed to help ensure that different product teams are moving in the same direction, that their work is relevant to the company as a whole, and that they will deliver results to keep pace with the market. For example, projects should always draw from, and be in alignment with, the company's strategic initiatives. These are fixed. Whether the strategy is to differentiate the company's products, drive operational efficiency, or develop new markets, these high-level strategies should be taken as givens and used to align the team.

Traditional measurement systems contain valuable elements that shouldn't be ignored.

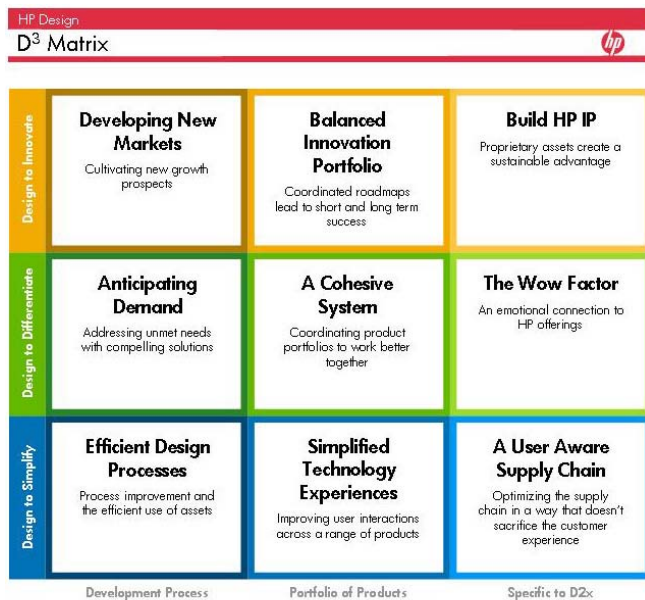
To get a better handle on innovation, some companies have attempted to constrict the process with existing measurement techniques. Time-honored measurement systems like Six Sigma and the Balanced Scorecard are effective in the right context, but are often implemented in a way that can stifle innovation.

These methods traditionally focus on operation and execution, with a drive for reliability, consistency and control that can hamper generative, creative thought and risk taking. While these systems do a great job capturing and analyzing quantitative data, they fall short when it comes to relevant qualitative information that is valuable to the design and innovation processes.

In developing a design metrics system, HP and Jump have found that these more traditional metrics systems are nonetheless founded on solid principles. The Balanced Scorecard promotes alignment on business goals and allows managers at different levels flexibility to choose their own success metrics. Six Sigma sets up an overarching framework for solving problems and gives people a set of tools to address them. We've found that the core elements of both systems could work for innovation and design, but we've adapted them to our design and innovation processes and to allow design teams to implement a more tailored system.

Framing Design's Impact at HP

The tools used to administer such a system should be simple. They must be designed to fit with the way different people work and should support a robust process of design and innovation.



A well-designed measurement system will serve as a compass that the team can use to make sure it's on course and headed in the right direction. One such powerful tool within HP is our D³ Matrix that, when used up front, aligns objectives and priorities. Teams use the framework as a foundational tool to prioritize and focus their project objectives early, and maintain alignment as they drive their projects forward to completion.

Each of the cells of the D³ Matrix represents a strategic design goal that can be pursued on a project. These goals are organized around horizontal bands that map to a larger, 3-tiered HP strategy known as Design to Simplify, Design to Differentiate, and Design to Innovate. Design to Simplify creates a solid foundation upon which the successive tiers can build and provide increasing innovation and value to both HP and its customers.

The goals of the D³ Matrix are further organized by column. The first column groups together goals that relate to development process and HP's R&D capability. The goals of the second column pertain to HP's portfolio of products and how users experience them. The final column includes additional goals that are highly important to each of the Design to Simplify, Differentiate or Innovate horizontal tiers.

Teams use the D³ Matrix to select top goals at the outset of a project and to also stay in alignment as the project get moving. The D³ Matrix allows teams to retain the flexibility to manage their work streams as they see fit, adapt to changing circumstances, and alter the tactics they're choosing to meet these goals. While the D³ Matrix provides a common foundation for the strategic use of design at HP, it also allows for the twists and turns of the design process, and integrates easily with existing project practices.

You may have to do it wrong so you can get it right.

In the process of developing a design measurement system at HP, we're also finding great value by approaching the problem with a "launch and learn" mindset. Trying to figure out what should work in theory is of limited value as you're not going to get it right in the abstract. As the system gains more adoption at HP, it's a constant back and forth between what should work theoretically and what works in practice. Just as with the design process itself, developing a design metrics system has to be iterative. As product development teams use the system, we are learning what works and what needs to be improved for future versions. Remember, you'll probably be developing something that hasn't been done before in your organization, so be prepared to experiment until you find what works within your company culture.

Developing a design or innovation measurement system is not a one-size-fits-all proposition. Every company has different systems in place and its own corporate culture. Having said that, in the work that HP and Jump have done together, some best practices have emerged for integrating metrics into the design or innovation process.

Five Tips to keep in mind while managing and measuring design projects.

Actively using measurement as a communication and decision-making tool can help focus your team's efforts to meet your most important goals. The trick is to balance the desire to nurture a creative process with that of operating efficiently and consistently.

Tip #1: Stay focused on your goals.

Keeping your eye on the prize gets you beyond "meeting the numbers."

Tip #2: Base your metrics on your goals.

What you measure affects your outcome.

Tip #3: Communicate using a common language.

Speaking in terms that others can understand helps break down barriers.

Tip #4: Use real-time input to monitor your progress.

A dashboard of indicators will help you make better decisions as you go.

Tip #5: Narrate and illustrate your story.

Showing how you got there and where to go next helps build internal capacity.

Tip # 1: Stay focused on your goals.

Keeping your eye on the prize gets you beyond “meeting the numbers.”

It's easy to get hung up on the numbers that a team needs to meet. While numbers play a big role in metrics, it's important to look beyond them to the goals driving your efforts and your relevance to the business. For example, if the company is currently focused on cutting out inefficiencies from the organization in order to better compete with more efficient rivals, the team may want to focus on driving either supply chain or product development efficiencies.

At the kickoff of a design project at HP, teams use the D³ Matrix to identify the key goals of the project. This aligns stakeholder expectations and solidifies the strategic intent of the project. Later, it keeps the project both within scope and on.

A few things to keep in mind when aligning on goals:

Setting strategic goals involves getting different groups on the same page.

Usually the success or failure of an innovation-driven effort depends on getting buy-in from other groups within the company. Without proper initial alignment, it's all too typical for design and innovation projects to wither away or be misconstrued when they are handed off to a go-to-market or manufacturing team. In order to succeed, design and innovation teams need to work towards business goals and targets that everyone else has agreed on. Bringing all stakeholders together early takes time, but will make the development process much smoother, more reliable, and more powerful.

Don't confuse business goals with metrics.

When setting the business goals for an innovation project, make sure that they address the fundamental issues driving the business, not just the specific metrics the project is trying to hit. Asking a design or innovation team to create breakthrough product experiences highly relevant to a particular market segment is more meaningful than focusing on the need to increase market share by a specific percentage.

All objectives flow from customer's needs.

A strong process for innovation should always be focused on meeting customer needs, even when those needs are not always clearly articulated or fully understood. Goals at the onset of a design project should be rooted in creating a product or service that really helps people. Such goals can become a powerful motivating force and rallying cry for project teams.

Tip #2: Base your metrics on your goals.

What you measure affects your outcome.

It's often said that you get what you measure. Metrics can reinforce a healthy product development process. By aligning the metrics you're using and tracking to the right goals, you can encourage constructive behavior.

Anchor your success metrics to your goals.

Set a concrete definition of success by using the business goals to define your ultimate success metrics. For example, if you are interested in simplifying the user experience you could choose a decrease in the volume of support calls as a success metric. If you are interested in creating a more compelling ecosystem of products, you could choose to measure how often customers purchase complementing products in the ecosystem. In either case, with knowledge of the desired outcome, you can use historical and competitive data to set concrete benchmarks for the team. If these success metrics are not explicitly stated at the outset of a project, it is often difficult to fully understand the market dynamics at play measure how well the team has met its objectives.

And, the activities will follow.

With goals and corresponding metrics in place, it becomes easier to plan activities and allocate resources that encourage the team in the right direction. For example if you are trying to develop an ecosystem of products, you may need to bring together different product development teams within the organization for a design vision session.

When goals and metrics are agreed on upfront, product teams will be able to manage the design process around a clear definition of success – avoiding lengthy negotiations and costly rework. A clear metrics

framework will help designers know exactly which business goals to shoot for. This is the basis of the D³ Matrix. It sets the foundational goals for every project then informs the metrics and activities to meet those goals.

Tip # 3: Communicate using a common language.

Speaking in terms that others can understand helps break down barriers.

For designers and innovators, metrics can provide a shared vocabulary for the members of the team and the project stakeholders.

Others may need metrics to understand the value of a new initiative.

Many stakeholders use metrics and data analysis as fundamental elements of any business decision. Using a shared frame like the D³ Matrix helps define projects with concrete goals and metrics which can communicate the value of the innovation process in terms that stakeholders better understand. This establishes a common language which leads to constructive dialogue about the value of design. This in turn increases the strategic use of design. Even if the exact solution remains unknown, putting a stake in the ground by making projections and committing to tracking end results helps build the credibility and consensus with sponsors.

As the project evolves and teams move farther down the project timeline, it is important to communicate projections and targets around these metrics. For example, how will this new product or feature affect market share in concrete terms? Or, based on preliminary usability testing, how will this user interface impact service call volume? These types of concrete projections will be challenging early on in a project. However, regular projections of these quantitative metrics can complement more qualitative approaches,

enrich the story, and make the project feel more credible to stakeholders who are looking out for the bottom line.

Partner with the people who track the ultimate market results.

By collaborating early with analysts in marketing, sales, or customer support, innovation teams can build more reliable ways to project the impact of a new offering. Working with these groups early on can help to get their buy-in and support, which will be very helpful as the team refines its projections and later tracks actual market results.

Document all assumptions to tell the story behind the numbers.

Clearly articulating the assumptions behind a team's projections provides an opportunity to embed a deeper and more qualitative understanding of the numbers. These assumptions can tell a richer story and highlight key questions in the development process.

Tip #4: Use real-time input to monitor your progress.

A dashboard of indicators will help you make better decisions as you go.

In addition to making projections and assessing accomplishments, metrics should serve as an active tool for making real-time decisions. By establishing in-process indicators for your project, you can monitor your progress and course-correct as needed. With a firm understanding of business goals and success metrics, innovation teams already have a good start in planning for the appropriate development process activities. Using and regularly reporting a series of flexible in-process indicators that result from these activities will help the team stay on-track and communicate their work. The metrics and indicators a team collects along the way, become useful data points that help the team decide what to work on next.

Some of the richest data that comes from the design process often shows up in the anecdotes that emerge from user research, brainstorming, prototyping and testing. Digging deeply into these stories, and communicating them in process, is often an effective way to reassure stakeholders of progress. For example, positive user feedback from an early usability test can indicate that the team is on-track to developing a product that will reduce support call volume down the road.

To make in-process indicators more useful:

Stay on track by reporting all findings in relation to the business goals.

Design exploration is constantly uncovering new potential directions and opportunities. While it may be tempting to explore these new avenues for growth, sometimes too much divergence can cause a team to lose focus and distract from their core goals. Thus, measuring the innovation process requires “keeping your eyes on the prize.” Every report-out to stakeholders should be seen as a chance to communicate: How does this new knowledge improve our likelihood of giving the customer what they need in a way that fits with our specific business goals? And, how does it help us be smart about what we do between now and the end of the project? Remember, when situations change, shared metrics and goals can help ground these conversations.

Keep track of failure, and learn from it.

Along the way, some of the team’s assumptions and ideas will be proven right. Others will be proven wrong. Keep in mind that the very act of projecting helps you learn, because it can surface incorrect assumptions and help to set the course of the rest of the project. The mark of a healthy innovation process is frequent failure, insights that get contradicted, and prototypes that don’t resonate with users. The key is to structure the process so that these failures get noticed early, the losses are small, and the team learns

how to improve. When tracking project progress, be sure to see these moments for their contribution to the emerging base of knowledge, not as setbacks.

Tip #5: Narrate and illustrate your story.

Showing how you got there and where to go next helps build internal capacity.

Metrics shouldn't be opaque figures – they should show how your actions link to the outcomes you've achieved. By documenting assumptions and clearly stating the methodology behind your results, you'll make the numbers more meaningful, win credibility along the way, and help your organization learn.

Help the organization learn by documenting and sharing results both qualitatively and quantitatively.

The ultimate goal of any measurement system is to gather enough data to start identifying patterns which can inform better decision-making. With this in mind, it is important to document and share the results of your work both during the project and after its end. This will prove valuable to the company when making future design investment decisions.

However, numbers rarely tell the whole story. In order to fully understand and communicate the value of the design process, the team should also develop case studies or reports that pair quantitative results with anecdotes and context about the process and situation. A strong case study demonstrates the bread crumb trail linking innovation investments, design activities, new insights, breakthrough products, and market results.

Consistently tracking design over time will uncover valuable insight around what works and what doesn't.

At HP, we've been building a rich business cases history of design successes to help institutionalize knowledge and inform future decisions by adding qualitative details, sharing best practices, and highlighting successes. This mixture of sharable qualitative and quantitative data, documented so that anyone from design to finance can analyze and access it, helps to assess the specific impacts being delivered and to continually build our knowledge and experience base. Over time, design teams and managers will be able to mine this resource to learn which metrics to start paying attention to, create an accurate picture of what a great product development process looks like and, even, how certain fuzzy design activities can lead to tangible market success.

But don't try to claim all of the credit for success.

As mentioned above, forging and maintaining a constructive relationships with other groups is incredibly important for helping to track and follow-up on design results over months or years. Their collaborative involvement is crucial to the success of any new product development or innovation. The business's eventual success will be driven by multiple factors, and projecting and reporting outcome metrics for your project shouldn't be about isolating the role of the product development team to the exclusion of these other groups. By tracking these measures as part of the process, however, a product development team can better understand how their work and investments can translate to business success, and the business, in turn, understands the value of design.

Innovation and design have an unpredictable creative element, but that doesn't mean their impacts are impossible to measure. In order for these practices to thrive and become an integral part of a business, they need to operate within a process that's structured enough to drive towards larger strategic business

goals while remaining flexible enough to enable exploration, creativity and discovery. Measurement tools can't replace good design judgment. Instead, they should add structure to discussions about the value of design.

A well-designed measurement system can serve as both a catalyst for stronger collaboration between all the stakeholders in an organization's product development process and a compass for creative teams to make sure they're heading in the right direction.

Addendum

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