Outcome Engineering 101

Five Guidelines to Delivering Products that Create Impact

At the apex of innovation — with an emphasis on business outcomes and meaningful growth — exists not just one north-star discipline, but two: design and engineering. Long considered fundamentally separate entities, engineering and design have long led project plans and new ideas toward product development in their own streams; each approach with its many advocates. It's time to shift to an evolved, technology-empowered design mindset. As technology informs design, and good design arms technology to become most effective by engaging with users, the two now sit at the top of the product development pyramid to co-create success. Here we offer five guidelines for delivering outcome-oriented products, illustrated with real-world examples.

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Executive Summary

At the highest level, "outcomes" are how success in digital engineering gets measured. Of course, the word "outcomes" is a bit abstract and can take on many forms. Did we improve upon user engagement? Did we produce new, sustainable revenue growth through that engagement? Are we iterating on our delivery model and becoming quicker to market? Are we continuously improving our digital capabilities?

Tangible business outcomes, regardless of form, are the goal of all product engineering initiatives. The realization of those target outcomes – or failure to meet them – drives a business's sustainability as an innovation leader. Not hitting targets? Competitors are ready to take the lead.

Today's reality is that technology is always evolving. Despite growing investments in personalization technologies, such as artificial intelligence (AI), machine learning and robotic process automation (RPA), the vast majority of consumers still report underwhelming digital experiences.[1] And yet 81% of market leaders in a Gartner survey expect their customer experience (CX) to impart a competitive edge in 2019.[2]

Why the disconnect? With deep experience in global digital engineering, we've identified a set of practices shared by successful innovators. The common thread is that, unlike most others in their space, top performing companies aren't design- or engineering-first when it comes to solutioning. They're both, equally.

When results don't align with initiative – often driven by starting with design and engineering unaligned – businesses end up with the lackluster customer response referenced above.

The goal is positive outcomes, and the approach is what we call *outcome engineering*. Successful innovators approach new opportunities by bringing technologists to the table alongside design leadership. Researched, informed empathy for the user experience is matched with informed technical perspective. Cross-functional leaders collaborate to understand the need, identify how experience can be improved through cutting-edge technology, and elevate the discussion through design-led creativity, data improvement and experience optimization.

Think of empathy as a deep understanding of what customers or employees feel and hope to accomplish during each step of their journey, whether they are buying an ad, reading an e-book, or ordering a home medical device.

In outcome engineering, technologists engage with designers to co-create solutions that match end-user needs. This requires significant technology-informed empathy – a new kind of design thinking – where clearly defined outcomes are the goal. This collaborative approach is the starting point.

Companies that master the outcome engineering approach lessen the risk of innovation by building solutions with the most outcome-oriented technology available, empowered by the right technology-informed design intuition and validating ideas with users before making major technology investments. What's more, they don't reject ideas for improving the customer journey solely because they require new infrastructure or processes. On the contrary, these companies readily explore new technologies if the business case demonstrates a return on investment.

This white paper presents five guidelines to help introduce outcome engineering into an organization – even those that are historically slow to change.

Guideline 1

Reframe the entry point of designers and engineers

Bringing together two very different teams to work cohesively when historically they've been trained to work separately can be fraught with challenges – namely in the form of egos. It's time to shift away from the mindset that designers and engineers are brought in "when the time is right."

Engineers have deep technical knowledge – often expressed in a language unknown to others. They not only know the technical implications of an idea, but they also carry the weight of delivery. Conversely, designers understand human behavior and typically have good instincts for right and wrong approaches for the user experience. Their work is the face of invention, and doing a good job often defines whether projects fail or succeed.

For both teams, their worldview can be shaped by well-informed perspectives that are often challenged by others with far less experience: "Can we get this to pop more?" "Can we quickly add AI to this third-party integration?"

The reality of perfect, modern product engineering is that neither design nor engineering supersede the other. Engineering enables design, and design enables engineering.

Data challenges design intuition, and design humanizes data-driven experiences. Both go hand in hand. Technology makes the design process more efficient by creating the toolset, the ability to reach the end user more effectively, the ability to collect, mine, extrapolate and learn from the data that good design empowers.

If you're after a successful business outcome with a hunger for innovation, then designer and engineers must work together – from the very first ideation meeting helping to conceive the product, discuss the users and their needs, and explore options. It's collaborative, and led by neither. By bringing these skills to the table at the same time, the conversation and outcome on both sides is dramatically elevated.

Outcome engineering

A creative process for digital engineering that marries technological perspective and design thinking methodologies, orienting product development to ensure desired business outcomes.

Guideline 2

Make innovation practical through empathy

User empathy is a deep understanding of users' motivations, processes and frustrations at every step of their journey. Maybe customers are anxious about selecting the wrong product. (A recommendations engine might be in order.) Maybe customers who need help with product setup are irritated about having to wait for a human agent, but they're distrustful of FAQs. (Consider a chatbot.)

How can you acquire empathy? It starts by listening. In a recent study by CB Insights, senior executives in large companies reported that the top source of successful innovations was customer input, far ahead of competitive intelligence, analyst reports and other sources.[3]

This is not to say that industry leaders wait for input from customers – they ask for it.

They should ask:

▐ **What steps do customers take to meet their goals?** (Order a product, buy an ad, set up a new router, etc.)

▐ **How do they feel at each step? What is their ideal experience? How much closer do they get to their goal?**

▐ **How can technology make each step or all steps of the experience faster, simpler or more rewarding?**

▐ **How can technology arm us to continue learning how our users engage with our journey?**

Guideline 3

Iterate regularly, with big impact, through small improvements

The goal is not always to invent a revolutionary solution on the same level as the iPad, e-commerce or the ATM. (But kudos if you do!) Rather, the goal is to improve consistently by examining each stage in the customer journey to find incremental opportunities for improvement.

Aim to stay ahead of the curve and keep designers and engineers actively looking for and empowered to make product improvements.

Tom Kelley, widely regarded as the father of design thinking, suggests closely scrutinizing every step of a customer's experience. "What patterns emerge?" he asks. "Anything surprising or strange? Question why certain steps occur, the order they occur in and so forth. Ask yourself how you might innovate each step."[4]

Your team needs a clearly defined process to:

▋ Identify new opportunities based on shifting customer demands or new technology availability – even at small scale.

▋ Prototype and validate ideas quickly.

▋ Partner with technology partners to speed delivery across projects.

▋ Provide a roadmap future innovation opportunities that set your company's growth foundation.

Customers might want recommendations for the right product model, to identify WiFi dead spots in their homes without having to schedule a service appointment, or just an Android app or better chatbot. As Kelley stated, "A small change in the journey can create an outsized change in the experience."

For more on this topic, see our white paper, "Seven Ways Traditional Companies Can Succeed with Disruptive Innovation."

"A small change in the journey can create an out-sized change in the experience."

- Tom Kelley

Guideline 4

Set target outcomes to validate with prototyping

Resistance to change is the norm in many large organizations. It's a natural response to memories of blown budgets, abandoned projects and diverted resources. But what if you built, always, with confidence that clear business objectives would be met?

Similar to the build–measure–learn (BML) feedback loop in the Lean methodology, a prototyping design sprint is a phased framework – empathy, idea, prototype, user testing and learning. Team members from different disciplines come together in a pod to work collaboratively.

The goal of the design sprint is to rapidly test concepts, bypassing internal roadblocks to identify innovations that customers actually want. Initial, high-level goals are set (more purchases per visit, faster time through the process, etc.) and real user testing validates the plan.

Design sprints in outcome engineering ignite a culture of innovation, even in traditionally slow-to-change organizations. Leaders are generally more receptive to new ideas without relinquishing their financial oversight because technology investments don't happen until user testing demonstrates that the idea has traction.

When introducing design sprints, keep these goals top of mind:

▌ **It's not about testing a complete product.**
Design sprints are done with prototypes – oftentimes without code – to validate a concept.

There are many approaches here but mimicking and testing the ideal end-user experience is the only requirement.

▌ **Refine the original product idea.** User testing often sparks ideas for features not in the original plan and nixes planned features that don't inspire users. Either way, the product introduced is better than the plan.

▌ **Accurately assess infrastructure requirements.** Design sprints reveal whether the new idea can be introduced on existing infrastructure or requires new technology.

▌ **Accelerate time to market.** Prototyping and user testing happen in days, not months, providing the data the team needs to decide whether to pivot or persevere. In summary, design sprints are cost-effective. They fail fast. And they produce products that customers have verified that they want.

Guideline 5

Combine the outcome with rewards through gamification

There's a saying, "One team, one dream" – meant to inspire team members to work together to achieve one goal. While it boasts great positivity, it can lack in motivation – the underlying "why" for your team's obsession with outcomes. Motivation by definition is what causes a person to change their behavior. In our case, this change in behavior isn't necessarily a correction, but a push to strive for the best performance possible. Words are great, but tangible, real impact on one's personal or professional life is better.

By gamifying our approach, outcome engineering teams – including trusted partners – have access to incentives to make an impact along the way, giving them an opportunity to visualize what's exactly "in it for them." Teams can see the better–faster–smarter way the goal is achieved, and the bigger impact meeting the goal will not only have on projects, but also on personal achievement.

Tying in access to rewards – whether that be external recognition, financial compensation or forward trajectory on a career path – allows the team to truly understand that every change, big or small, is recognized and made visible. When the impact comes, real trophies of achievement (incentives) come as well.

The same incentives need to be directed towards partners as well – after all, they are the ones trusted to be an integral part of the execution strategy. By incentivizing a healthy, leveled relationship where value is assessed constantly and upside is shared, companies are likely to find a partner that is fully vested in generating real outcomes.

Gamifying is twofold: it creates a culture within the company that is not only one of a growth mindset and fun, but it also motivates team members to excel, highlighting the importance and subsequent rewards of making a bigger impact. It's a motivation engine for producing amazing results.

Bonus Tip

Don't view current processes and technology as a jail

"We can only build products that our current infrastructure supports."

"We don't build for Android."

"Our architecture is too complex to integrate with a public cloud."

Stances like these reflect good intentions – generally to keep costs down and mitigate risk. But followed rigidly, they wall off companies from new business models and revenue streams.

By starting all conversations with engineering and design equally represented, product ideas are laid out with technology in mind – but not limited by it either. Engineers can recommend the best-case solutions for testing, and design sprints distill the potential outcome of whatever investment is necessary.

Design sprints mitigate architectural constraints because the team builds a business case for the investment, including adoption expectations and payback period, before investing in new infrastructure – and often without even building code. It's all prototyping and user testing.

When developing the business case, be sure to frankly assess whether you have the internal resources to manage the change that comes with new business models. Whether the new features or products you introduce are breakthrough or incremental, it's crucial to ensure that you have the people, processes and technology to take them to scale.

Looking Ahead

Gaining a competitive edge through outcome engineering requires a new mindset. Instead of relying on customers to tell you what they want, you anticipate new needs by scrutinizing every step of their journey (and having the data you need to do that). Instead of letting design be an afterthought to technology, or retrofitting technology to design's vision, elevate both to mutually bring out the best product possible. Instead of building a fully formed product over months or years, build a minimum-viable product (MVP) in weeks and continually refine it.

Outcome engineering jumpstarts a culture of innovation and leads to successful products. Knowing that the market potential has already been vetted, even conservative leaders can be more receptive to technology investments. Working in rapid cycles of ideation, prototyping and testing creates an innovation habit. New ideas flourish, pods bring them to life and the company becomes adept at resource allocation.

This requires a new mindset, team structure and processes. Many companies will benefit from working with an experienced partner that can help establish expectations, define roles and responsibilities and manage the cultural changes connected with the outcome engineering approach.

About the author

Andres Angelani

Andres Angelani is the Chief Executive Officer of Cognizant Softvision.

He has extensive experience building strategic partnerships that create new revenue streams, realizing innovative business models and market offerings through new ways of developing software, and building high-performance teams and the right culture to bring the best of what design and technology have to offer to industries. Andres is today at the epicenter of the digital economy, leading programs that have reshaped businesses and industries. His passion for music, science and technology helped shape his life and professional career, and has become an integral part of what he brings to his leadership in fostering innovative culture, inspiring and growing talent in new, transformative ways.

Andres is a frequent speaker and thought leader. In 2016, he co-authored *The Never-Ending Digital Journey: Creating New Consumer Experiences Through Technology.* His latest book, *Transforming While Performing,* is his second.

Endnotes

[1] "Gartner Survey Finds That Most Consumers Have Underwhelming Digital Experiences," October 3, 2018.

[2] "Key Findings From the Gartner Customer Experience Survey," Gartner, March 16, 2018.

[3] "State of Innovation: Survey of 677 Corporate Strategy Executives," CB Insights, 2018.

[4] "Build Your Creative Confidence: Customer Journey Map," IDEO, March 21, 2019.

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