

Research



Innovation & Risk: Productive Ties with Legal, Compliance, and Security Teams

A Letter From Our Sponsor

Security and innovation are two sides of the same digital coin, so it's important we commit to both in a fast-changing world. Disruption is happening everywhere, challenging old certainties, creating new opportunities, but also new risks. Security professionals have been living with this reality for a long time, but the changing nature, scope, and frequency of attacks makes developing new solutions much more urgent.

That's why we're delighted to partner with Innovation Leader to bring you this research report, "Innovation and Risk." Now more than ever, innovation is needed in the security space—and, likewise, we need to ensure that each innovation is designed such that it is truly secure.

We live in a hyper-connected world. Smart cities, cars, homes, and speakers are becoming the norm. With an estimated 30 billion connected devices by 2020, this exponential growth in data and analytics brings lots of convenience and access to information, but it also raises concerns about trust, privacy, and how to keep it all secure.

At Mastercard, we don't trade off security and convenience. We believe in security by design—that is, building solutions with security at the forefront—right from the development phase. It's how we created breakthrough security solutions for chip, contactless cards, and QR codes, and it's how we are reinventing authentication in the digital world. These solutions keep information secure, as well as easy and convenient to use. Innovation managers play a significant role by collaborating with security colleagues to foster this holistic mindset.

This report includes interviews, testimony, and articles from your peers that describe how they approach working with their colleagues in security, legal, and compliance. While every organization implements innovation in its own distinct way, one common thread I hope you will observe is the need to collaborate across the enterprise and with industry partners to create a successful innovation program that encompasses all points of view.

You are in a unique position to drive change within your organizations. What you find here will help you do so.

Regards,

AJAY BHALLA
President, Cyber and Intelligence Solutions
Mastercard



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Introduction & Data Overview



Innovators are attracted to the open road—and high speed. But in large organizations, their desire to move fast and explore new terrain often comes into conflict with colleagues in the compliance, legal, and information security departments. They've succeeded in their professions by putting up guardrails and warning signs that keep everything safe and under control. Often, innovators can regard them as the "long arm of the law," while staffers in the compliance, legal, and InfoSec groups view the innovators as "Fast and Furious"-style street racers with no concern for safety.

What's the formula for getting these two very different personality types—each with fundamentally different incentives and rewards—to work together productively?

That was the central question we asked in researching this report, and it was also the focus of a survey that we fielded in Q4 2018, which received 150 qualified responses from leaders in large organizations. Our goal was to highlight some of the best practices in creating a collaborative, rather than adversarial, relationship that will help an organization achieve its innovation goals.

This opening section presents the survey data, with color commentary from executives at ADP, Avanade, BBVA, BNP Paribas, Hospital Corporation of America, Reliant Energy, and Sanofi. The "Case Studies" section gathers Innovation Leader pieces published previously that explore the question above. And the "Advice" section collects anonymous recommendations from our survey respon-

dents. In that section, you'll find these two wise suggestions about balancing speed and experimentation with safety:

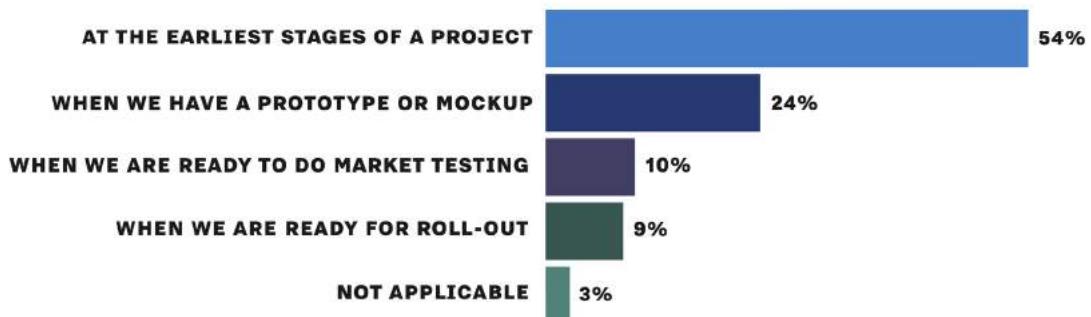
"Help [colleagues in security, compliance, and legal] understand the business benefit of what you are pursuing—but also show appreciation for the important roles that they play in mitigating risk for the business."

"Don't consider it ever checked off the list; you need to continue to engage these teams. The responsibility is on the project team to engage. If you wait for them to come to you, the result will not be good for your project."

...

The largest respondent clusters in our survey represented industries like consumer goods and products, financial services and insurance, technology, healthcare, pharmaceuticals and life sciences, and energy—mostly industries that involve a fair amount of regulatory oversight and intellectual property issues. Just 22 percent of our respondents reported being "not well aligned" with colleagues in compliance, legal, and information security roles; the remaining 78 percent said they are either "well aligned" or "somewhat well aligned." A plurality of respondents (48 percent) said they viewed the experience of working closely with colleagues in risk management roles as "somewhere in between" a net positive and a necessary evil. One-quarter described it as a positive experience; 28 percent said it was a necessary evil. That suggests that even when innovation teams feel they are in alignment with their risk management colleagues, it can still be a challenging experience that adds time, friction, and scads of additional meetings, calls, and e-mails to most projects.

OVERALL, WE TEND TO ENGAGE WITH COLLEAGUES IN INFORMATION SECURITY, LEGAL, AND COMPLIANCE ROLES...



When Do You Engage?

It's certainly a good thing that 54 percent of our survey respondents report that they are involving colleagues in compliance, legal, and InfoSec at the very earliest stages of their projects. Nearly one-quarter say they wait until they have a prototype built, and just 10 percent say they wait until it's time to do market-testing. Nine percent don't tend to engage those colleagues until they're ready to launch a product.

Amongst the innovation leaders we interviewed, the consensus was that it is never too early to start identifying the risk management groups you will need to work with; building relationships and defining how you will interact; and briefing them on concepts you're developing.

"It seems to be the norm among many teams that we go to compliance, regulatory, legal, HR, [and] finance once we know what the idea looks and once we've drafted the business case, and once we've solicited sponsorship," says Natalija Jovanovic, Head Digital Catalyst at Sanofi, the \$40 billion French pharmaceutical company. "My approach was completely opposite. My compliance and regulatory and legal colleagues, as well as HR and finance colleagues, were some of the first people to whom I went, even when the idea was nothing more than an eggshell. I think that approach was not only helpful to me, but they were usually eager to contribute their expertise and identify potential issues early on. I think they also enjoy being part of the creative process." Prior to working at Sanofi, Jovanovic was Head of Digital Solutions at the insurance firm AIG and part of the innovation team at Brown Brothers

Harriman, a private bank.

Jovanovic says that it can be an issue presenting those kinds of "eggshell ideas" to colleagues who are used to evaluating more hard-boiled business cases. One approach she employs is to say, "My apologies, I don't have a business case, because I'm coming to you with an early idea and want to solicit your expertise and advice, before we potentially go down the wrong path." Once they [realized] that, many of them opened up and said, 'Oh, so you're coming to me early?' They were just very surprised. And I would say, 'Yes, I have a limited amount of hours, limited resources—why wouldn't I come to you early?' Once we got over that hurdle, they were just incredibly helpful."

At Reliant Energy, a Texas-based energy provider that is part of \$12 billion NRG Energy, the innovation process has been designed "around the fact that we need to engage our regulatory and risk team early on," says Scott Burns, Head of Innovation and Customer Experience. Burns says that when he first joined the team, "there were definitely gaps when people were trying to get things done quickly, and you'd miss things." But as the process has evolved, and the role of "product manager" on Burns' team has become better-defined, part of that role is to make sure that all of the appropriate stakeholders have been brought in.

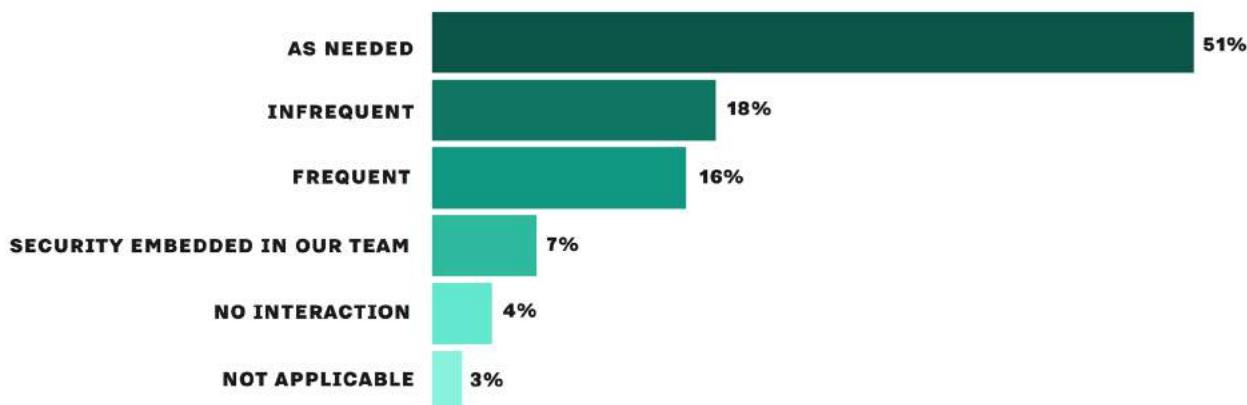
"I would say that it's very much a collaborative and congenial relationship, working toward the solution versus [risk managers acting like] the 'committee of no,'" Burns says. "It's not a good cop/bad cop scenario."

As an example, Burns mentions a pre-paid electricity offering that the team has been developing in 2018. With that, he says, "We had to engage with both the regulatory team, and then also...a risk



Scott Burns, Head of Innovation and Customer Experience, NRG Energy

HOW WOULD YOU DESCRIBE YOUR INTERACTIONS WITH INFORMATION SECURITY COLLEAGUES?



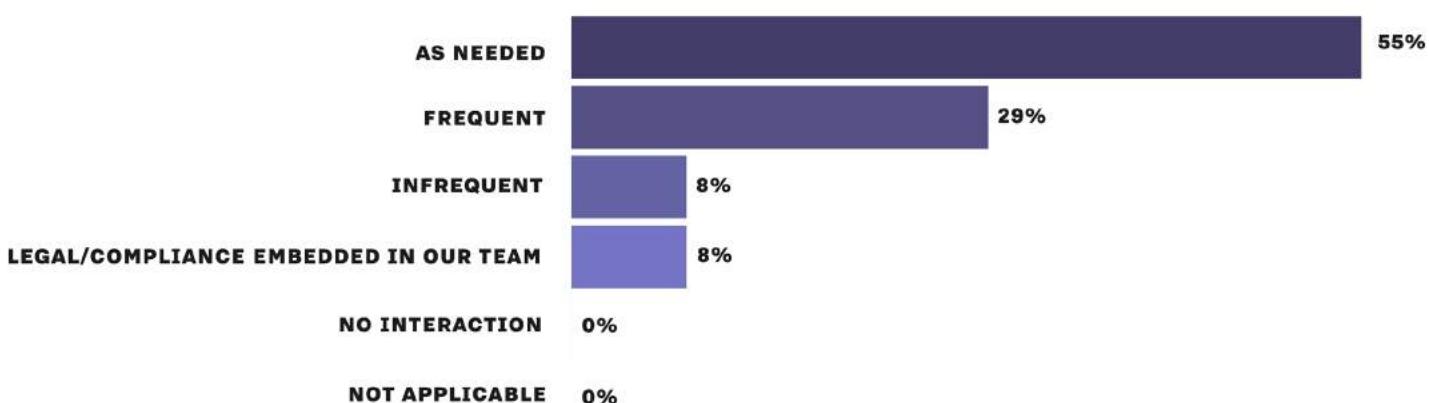
group that looks at our plans and ensures that the financial commitments we make to customers, as a Fortune 500 company, we can make those commitments. So we engaged both of those teams early on to talk through what we were thinking from an innovation perspective, and what enhancements we want to make to the product. There were definitely a couple of iterations. We'd make modifications to what our original ideas were. What we're actually going to be rolling out is based on their inputs."

"If there is something there that could eventually kill us, even as an organization, most likely today it's fraud and cybersecurity," says Pepe Olalla, Head of Business Development at BBVA Compass, a subsidiary of the Spanish banking giant BBVA. "We are very conscious of that." One way that consciousness manifests itself is that new product development teams are "comprehensive," Olalla says, with team members from business units, marketing, engineer-

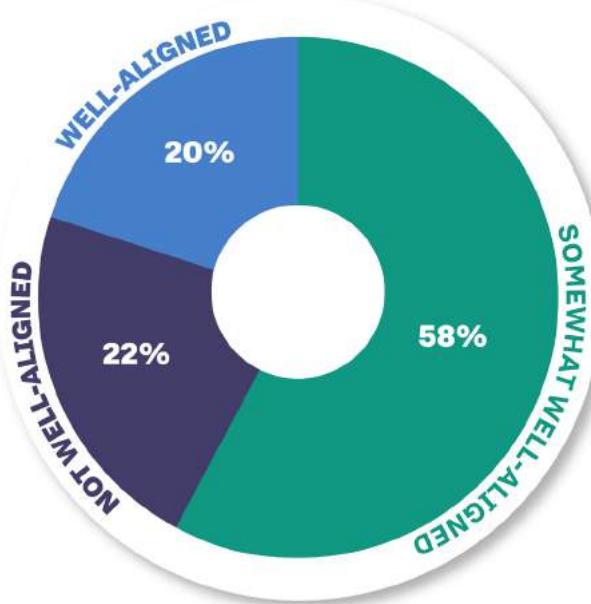
ing, risk, and security. "They are part of the team since inception," he explains. "Security and fraud [protection] have to be in the design. It's not something you can 'check in with' at any point. It might happen at any point in the customer's journey."

Aaron Proietti, a former head of the marketing innovation lab at Transamerica, the insurance firm, recalls including the legal team in a project that was going to allow customers to post comments on the Transamerica website. Even though this happens on thousands of other websites, the in-house attorneys suggested that every comment first be sent to their inbox for a legal review before being published. Proietti suggests that you "include these gatekeeper functions much earlier in the front-end stages of innovation." He adds, "In addition to including them early, they should be included in generative discussions to answer questions like 'what would it look like if we...' or 'how could we...' Generative

HOW WOULD YOU DESCRIBE YOUR INTERACTIONS WITH LEGAL AND COMPLIANCE COLLEAGUES?



HOW WELL-ALIGNED DO YOU FEEL WITH COLLEAGUES IN INFORMATION SECURITY, LEGAL, AND COMPLIANCE ROLES?



dialog helps mitigate any tendency they may have to fall back into their risk management mindset. In the end, they'll have the same feeling as everyone else — that they helped create something new, and they'll be more likely to champion it.”

How Do You Achieve Alignment?

Frequent meetings, conference calls, and other communications can help get innovation teams aligned with colleagues who provide input on risks and compliance issues. About one-third of our survey respondents said they interact with compliance and legal colleagues on a “frequent” basis; that number dropped to 16 percent when we asked about colleagues who work on information security—perhaps because not every new product has a digital or software component. But some teams actually have legal, compliance, and InfoSec colleagues “embedded” with them, available for input and guidance on a daily basis. That number was 8 percent when we asked about legal and compliance and 7 percent when we asked about information security. But roughly half of respondents said they consult risk management colleagues on an “as needed” basis (55 percent for legal and compliance, and 51 percent for information security). There were no respondents who said that they don’t have any interaction with legal and compliance colleagues, while 4 percent of respondents said that they don’t interact with InfoSec colleagues.

COMMENTS: ALIGNMENT



Selected comments from survey respondents to our question about their alignment with risk management teams:

WELL-ALIGNED

We get their opinion and understand the normal approach for moving forward, but we don't let them slow us down or derail our efforts to get to MVP.

— *Retail industry*

We have learned to embrace their skills and work with them, instead of in spite of them. We have moved them to become more entrepreneurial in the process. — *Hospitality and leisure industry*

The key is continuous engagement and early involvement. InfoSec people like no surprises, and we tend to ensure that we don't give them surprises at the end. Additionally, having InfoSec and legal team[s] as a part of ideation and early part of innovation process helps the teams to align well and take care of potential security risks during the lifecycle. Saves time and effort overall. Being aligned on “why” we are doing what we are doing also matters with the InfoSec teams. — *Tech industry*

COMMENTS: ALIGNMENT

CONTINUED...

We are tightly connected, as we need their services to move things forward. We are constantly communicating. — *Financial services industry*

We meet regularly to seek guidance/expertise and/or share upcoming releases and potential hotspots. — *Tech industry*

We sit within the IT infrastructure and hold weekly meetings with our legal and security counterparts to ensure potential pitfalls are identified and addressed early. — *Healthcare industry*

We bake their considerations into our early thinking, and whenever we feel like we're getting close to an electric fence, even in our thinking, we huddle and align. — *Automotive, transport and logistics*

When properly briefed and they are bought into purpose of project, the relationship works well and there is a joint need to see it succeed.

— *Retail industry*

SOMEWHAT WELL-ALIGNED

Both parties are doing what's in the best interest of the company. We try to get them to yes before they tell us no. Because these teams start from a position of avoiding risk, it can be difficult to be on the forefront of the industry. — *Healthcare industry*

They seem to be willing to work with us, but are frequently overloaded with work and other efforts, and can therefore sometimes forget to follow up with us, or omit their concerns until we have a deadline... — *Financial services industry*

We generally have the same objectives but priorities are often different. — *Financial services industry*

The alignment varies depending on the horizon and potential disruptive nature of the innovation. — *Media, communications, and telecom industry*

Depends on the compliance person; [there are] many different mindsets, some extremely well aligned, others not at all.

— *Pharmaceuticals and life sciences industry*

Sometimes it is a serendipitous connection. I have learned to reach out proactively, but there is no process organizationally. — *Business services industry*

In our company, when they got started with breakthrough innovation strategies, they created a cybersecurity product team. This has been fantastic for digital products. However, there are other compliance and legal-related areas that didn't get this sort of "upgrade," and we still have big gaps in knowledge as well as capacity to support new types of products and markets. — *Consumer goods and products industry*

We have a good relationship with our legal colleagues, particularly in terms of contractual agreements for external partnerships and all things IP. Involving them early on tends to move things along more quickly. ... On the security and compliance/regulatory side, the relationship is sporadic and not at all aligned.

— *Consumer goods and products industry*

We've learned (the hard way) that it is critical to have a dedicated resource who eventually becomes part of a team and starts advocating for, rather than blocking, an innovation. — *Financial services industry*

We have a legal team. They are on-site at our lab once a week. We use an online tool to submit NDAs and other requests. The platform works, but the process is just slow...for NDAs they take 2 weeks! You'd think having done so many, we would have a more standardized process that can shorten the lead time.

— *Industrial manufacturing industry*

We've come a long way; it used to be that we were not very aligned at all. It's taken years for those in legal and IT roles to be aligned with us. IT, legal, and compliance have a different set of goals, mostly conflicting (no risk taking!) or in some cases in competition (IT is supposed to be the digital innovators—innovation should be under IT!). We're also under separate leaders all the way up to the C-suite, and those leaders don't always talk to each other or see eye-to-eye.

— *Energy and utilities industry*

COMMENTS: ALIGNMENT

CONTINUED...

Sometimes security/legal/compliance requirements prevent us from working with early-stage or more risky companies. Their requirements also occasionally create roadblocks to running small-scale proof-of-concept tests. — *Financial services industry*

[Project teams] receive feedback that security, legal, and compliance should be engaged earlier in the innovation journey. This feedback rarely makes it to the project teams until it is too late.

— *Financial services industry*

Once a relationship has been built, (e.g., legal with respect to IP), they become allies. IT [has been] helpful in supporting us on projects that would have things “in the cloud” by pointing out how much of everything the company does every day is already in the cloud. Procurement/compliance is just very old school; [they] don’t get it. We have to be very persistent, patient, and insistent when it comes to getting deals that work for both parties.

— *Automotive, transport, and logistics industry*

NOT VERY WELL-ALIGNED

They generally do not view their role as “How can we make this work?” (More often the polar opposite.) There are refreshing exceptions (but they pay dues to collaborate outside their silo). Most of them reflect the world view of their boss and were hired with that compliant attitude as a priority.

— *Energy and utilities industry*

[Our team is] seen as low priority with regard to urgency, because we are so front-end. [They] tend to have a lot more pressing matters from the main organization, which are considered both more urgent and important. In some situations, there is some jealousy towards front-end innovation teams and skunkworks, and [the legal/IT/compliance] folks will check the innovations team’s efforts, or throw their weight around as a power play.

— *Pharmaceuticals and life sciences industry*

These roles have different priorities and very little accountability for the business results. They infrequently interact with the client and/or client services or sales teams. They are able to take the most conservative approach that may not be in the

designer’s or client’s best interest, and then rely on others to answer for the gaps that arise.

— *Financial services industry*

The classic wrestling match between big corporate standards and small agile innovation... — *Consumer goods and products industry*

Those roles are always looking to be the most risk-averse and “by the book.” We aren’t working closely enough as an organization to come up with new ways to approach security, legal, and compliance roadblocks of the past.

— *Consumer goods and products industry*

Problem-oriented mindset rather than solution-oriented. — *Automotive, transport, and logistics industry*

Seems like they feel obligated to be on the defensive, no matter how good an idea.

— *Pharmaceuticals and life sciences industry*

Risk mitigation principles are difficult to overlay with an MVP experiment that is testing a single hypothesis. — *Pharmaceuticals and life sciences industry*

Our operating policies are very risk-averse and not conducive to the kinds of potential information sharing that innovation needs to engage in with early stage opportunities. — *Technology industry*

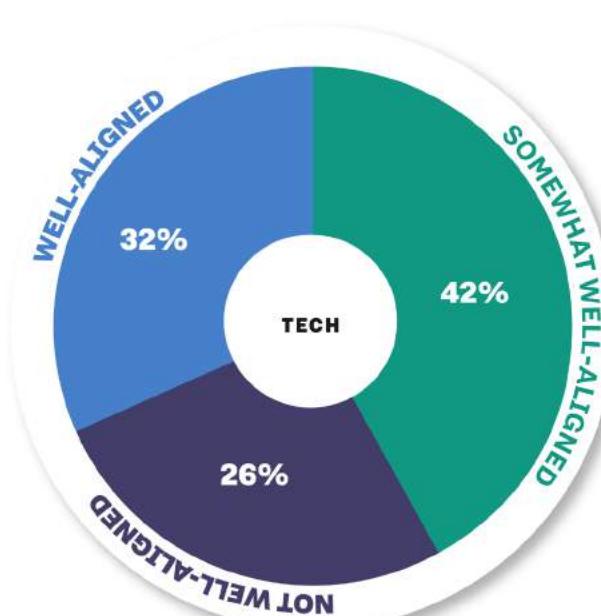
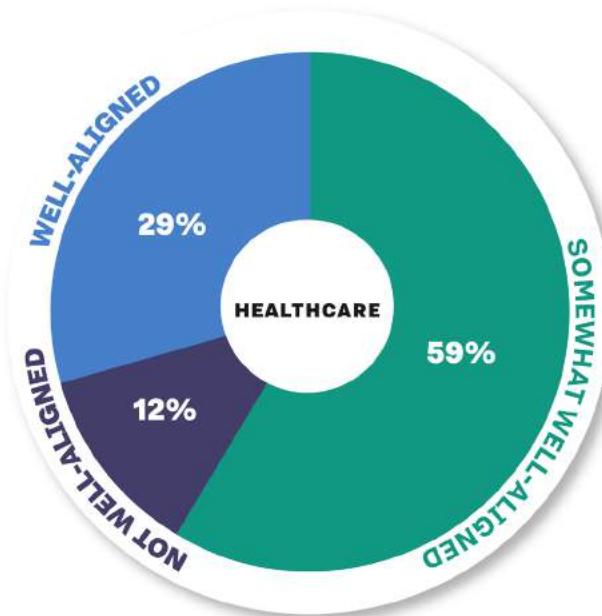
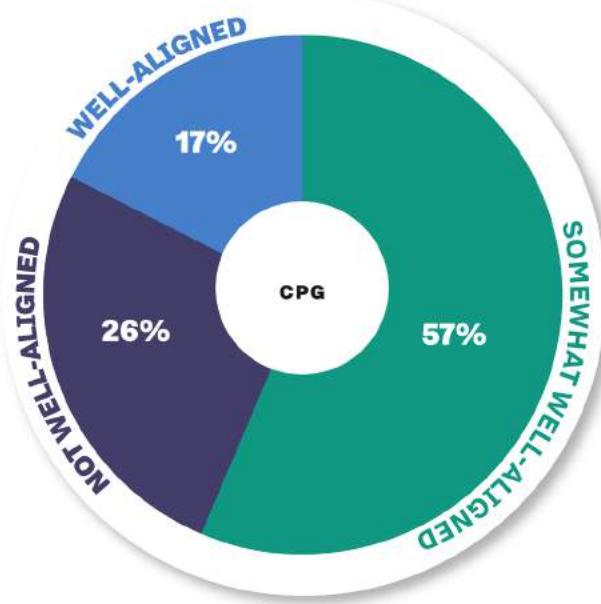
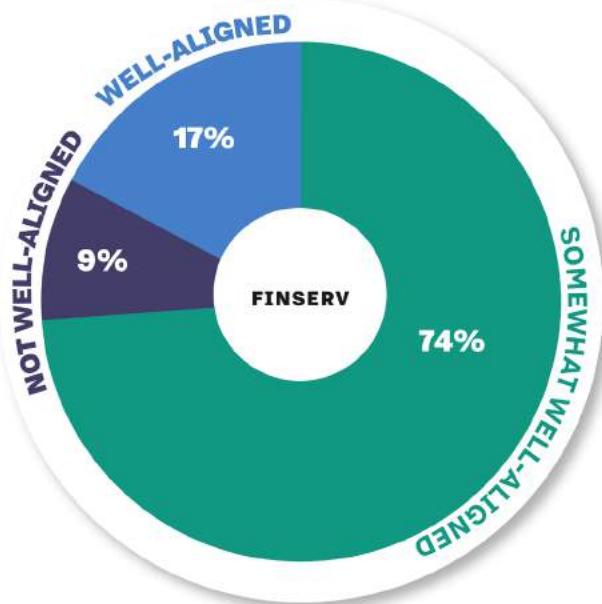
Their process is too slow to adapt to the timelines required in innovation projects.

— *Consumer goods and products industry*

Our legal team finds creative ways of being conservative, often blind-siding us. — *Automotive, transport, and logistics industry*

Old traditional policy and procedural functions are rarely supportive of innovation, as it does not fit with current policy. That’s why it’s called innovation. That’s why it’s feared. Noncompliance with status quo. Very scary! — *Engineering and construction industry*

**INDUSTRY BREAKDOWN: HOW WELL-ALIGNED DO YOU FEEL WITH COLLEAGUES IN INFORMATION SECURITY,
LEGAL, AND COMPLIANCE ROLES?**



Jovanovic at Sanofi says that strong relationships are pre-requisites for getting innovation teams and colleagues working toward the same goals. She relates a story about the manager of an aircraft plant and the head of the worker's union. "The first Tuesday of the month, they'd go out for a beer together because they knew they'd eventually be at each other's throats," she says. "It's better to be at each other's throats after you've shared a few beers and gotten to know the other person."

During those conversations—whether over beer, lunch, or coffee—it's essential to listen, rather than just detailing the merits of your team's idea. "Just like we have to interview any stakeholder, or any user... we apply the same principles to interviewing and listening to the experts who can make the difference between your project going down an absolutely wrong path and being a success," Jovanovic says.

Innovators, she continues, "have to come across as if they are willing to let go if they hear advice that absolutely makes the idea unfeasible. One of the job requirements for being a person in innovation or digital solutions is that you are an unfettered enthusiast. And so we wouldn't be doing this job [and] putting ourselves through hundreds of hours of very unpleasant meetings sometimes if we weren't unfettered enthusiasts. However, when you approach colleagues whose job it is to look at risk, that unfettered enthusiasm is sometimes misinterpreted as unwillingness to listen."

At one point in Jovanovic's career, she says, "my manager was joking that I work for compliance, risk, and regulatory, because I spend more time in their offices than mine. But I think you have to invest the time."

After those early meetings, and more time developing the idea, Jovanovic says that "you might eventually come back to [the experts you've met with previously] and say, 'Thank you for identifying a variety of risks for us. I think that these four would be most instrumental to the initiative. Can we discuss some of the mitigation techniques or alternative paths for this idea to take?' That's when you put them in front of a white board and get the creative juices flowing. And some people might say, 'They don't have creative juices.' But they all do! We all do. ... In the end, you may come to a position where you [collectively] either agree to mitigate risks, or [you] agree that the risks are such that it's a terrible idea, and [you] cannot go forward."

At HCA Healthcare, which operates 178 hospitals as well as urgent care centers and clinics in the US and UK, the central innovation group looks at many different ideas to determine which need additional support and resources for development. "Every single project

or opportunity that comes across my desk, I have to think about what's the risk that exists here?" says David Wedemeyer, Assistant Vice President for Strategy and Innovation at HCA. "Who do I need to pull in to evaluate what we [should] do here?" That may involve working with internal audit teams, legal, or a security, risk, and assessment team that sits within IT. There's also a formal cross-functional advisory group that includes many of those functions, along with different business lines like telemedicine or clinical services. "On a monthly basis, we're meeting with all these folks to talk about our activity," Wedemeyer explains, "so they understand what we're thinking about doing and what we're testing currently, so they can flag those risks we might not see."

Those kinds of reviews can slow projects down, of course, but "it helps us be calculated in our approach," Wedemeyer says. "We can work a project through all these processes in 4 to 6 weeks." If there's a complex information security review, or a legal analysis required, "that can increase the time by about a month, but the way we look at it, it's worth it," he says. The philosophy that has evolved within HCA's innovation program is, "Let's spend the time up front to understand the risks and evaluate those risks as best we can, so that if we need to, we can shut something down or we can pivot earlier rather than later," Wedemeyer explains.

Security, legal, and compliance colleagues can also be a source of ideas—if you're willing to listen. "They understand the problems of an organization," Wedemeyer says. "So that's an interesting source of where innovation should focus its efforts." Their role can not only be to prevent the innovation team from breaking rules or creating vulnerabilities, "but to help me identify the right projects for our group. Sometimes I don't think people view them that way," he says.

Whatever concept you are presenting to a risk



David Wedemeyer, Assistant Vice President for Strategy and Innovation, HCA

TOP 5 INDUSTRIES...

Top 5 Industries That Describe Themselves as Not Well-Aligned with Colleagues in InfoSec, Legal, and Compliance Roles

1. Consumer Goods / Consumer Products
2. Technology
3. Pharmaceuticals and Life Sciences
4. Automotive, Transport & Logistics
5. Business Services / Service Provider

management group, says Alexandra Pelletier, “it helps to have a benchmark or reference point from another reputable [company doing something similar], so they know they aren’t the only ones on a limb if they say ‘yes’ to the request.” Pelletier is a former Director of Digital Innovation at Boston Children’s Hospital, and she was a Presidential Innovation Fellow during the Obama administration who worked with various federal agencies.

More meetings and communication tend to create better alignment—though we did also hear from one survey respondent in the medical device industry who said that interactions with security, legal, and compliance colleagues has “been the absolute worst part of the job for me. It more than slows down progress. It’s a legitimate obstacle, and I have had to shut projects down completely or take them completely off-site due to their intransigence. ... [Our folks would] try to show value and assert authority by saying no.” Shakespeare was right, this respondent quipped, when he wrote, “Let’s kill all the lawyers.”

Security: A Growing Concern

Interviewees mentioned security breaches at Equifax, Facebook, Uber, and Under Armour’s MyFitnessPal app as instances that have dialed up consumer awareness about information security.

But Jovanovic at Sanofi posits that that there are different levels of consumer concern. “There are consumers who don’t ask any security questions, and then there are consumers who are medium-level, who at the very least check that you have a secure website in Chrome—it’s green, right? And then there are consumers who are becoming really savvy about it. I think at the very least, everyone is aware of identity theft,” she says.

COMMENTS: SECURITY



Selected comments from survey respondents to our question about whether they have sufficient resources for information security:

InfoSec resources are spread too thin and are not clear about expectations and needs. Sometimes [it can be] difficult to get a response.

— Technology industry

We had a cyberattack last year that affected our \$50B company for a week. It cost us a ton of money to recover. Since then, different security layers have been added to protect us. It was a learning and humbling experience.

— Industrial manufacturing industry

Being the best in security adds tremendous value, but creates a barrier to speed to market. Engaging security during early stages minimizes the speed bump when going to market.

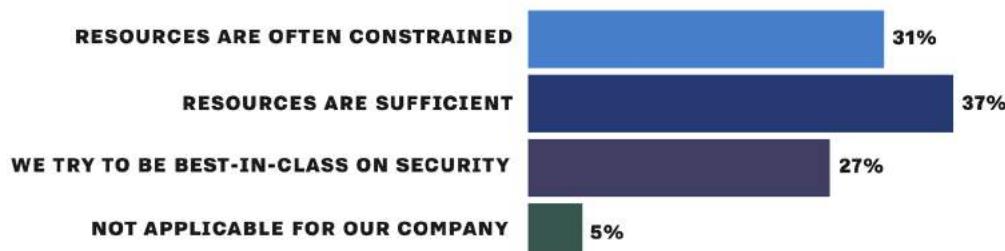
— Financial services industry

Best-of-breed security can cost money (e.g., to implement/support CASB) meaning lightweight MVPs might not be feasible. — Energy and utilities industry

High standards required with low resources creates a “process” mentality...and deprioritizes the bespoke requirements needed for experimentation.

— Pharmaceuticals and life sciences industry

IN TERMS OF INFORMATION SECURITY, IN OUR COMPANY:



COMMENTS: SECURITY

CONTINUED...

We have a good group and lots of tools. Knowledge is also strong in the company about threats.

— *Financial services industry*

We tend to react, versus being proactive.

— *Financial services industry*

The company has been very proactive with respect to cybersecurity—both with conducting self-imposed audits, as well as coming up with plans to address any gaps. Our staff in that area are competent and good development partners. However, I believe it's primarily viewed as a way of being responsible and managing risk, more than as a competitive advantage.

— *Consumer products industry*

While we do have a big focus on InfoSec and staff it well, there is tremendous need and demand, and there are always things we need that they can't deliver. But I wouldn't say it's challenging to meet minimum requirements—we do that just fine.

— *Financial services industry*

IS is critical in a HIPAA covered-entity. While resources are occasionally constrained, the mandated security of data in my organization is a must-have. However, at times, lack of resources prevents us from developing enhancements or employing innovative communication strategies that are compliant with the regulatory requirements.

— *Healthcare industry*

It is often difficult to find someone to talk to find answers on security questions. Once we do find the right person, it's difficult to find time on that person's calendar, and we rarely are able to meet project or product timelines if we are to follow the enterprise process for security consultations or engagements. — *Financial services industry*

We err on the side of [being] extra secure as it is imperative for our success and brand, but that usually slows the pace of innovation.

— *Financial services industry*

[We] repeatedly run into trouble with IT, [with regard to] network security issues. Eventually, we just went entirely off the grid and do all our experiments/iterations outside the network or at home. Succeeded outside of the company... It won't be of any help when trying to scale/integrate with the larger organization, but you have to get from point A to B before thinking about going from Y to Z. We gave it our best shot, and moved on.

— *Pharmaceuticals and life sciences industry*

We house sensitive customer data, and any security breach could harm them and reflect poorly on our company. — *Automotive, transport and logistics industry*

It's fundamental to our business, clients, and IP.

— *Business services provider*

We are resource-constrained, but prioritize areas of critical importance and identify opportunities to leverage other resources to augment needs.

— *Healthcare industry*

Often there is no bandwidth in these groups to even do a minimal review of our proposal, so delays of weeks due to that can occur. — *Pharmaceuticals and life sciences industry*

We have an old school approach to security, which has huge holes in it that few in security can see.

— *Automotive, transport and logistics industry*

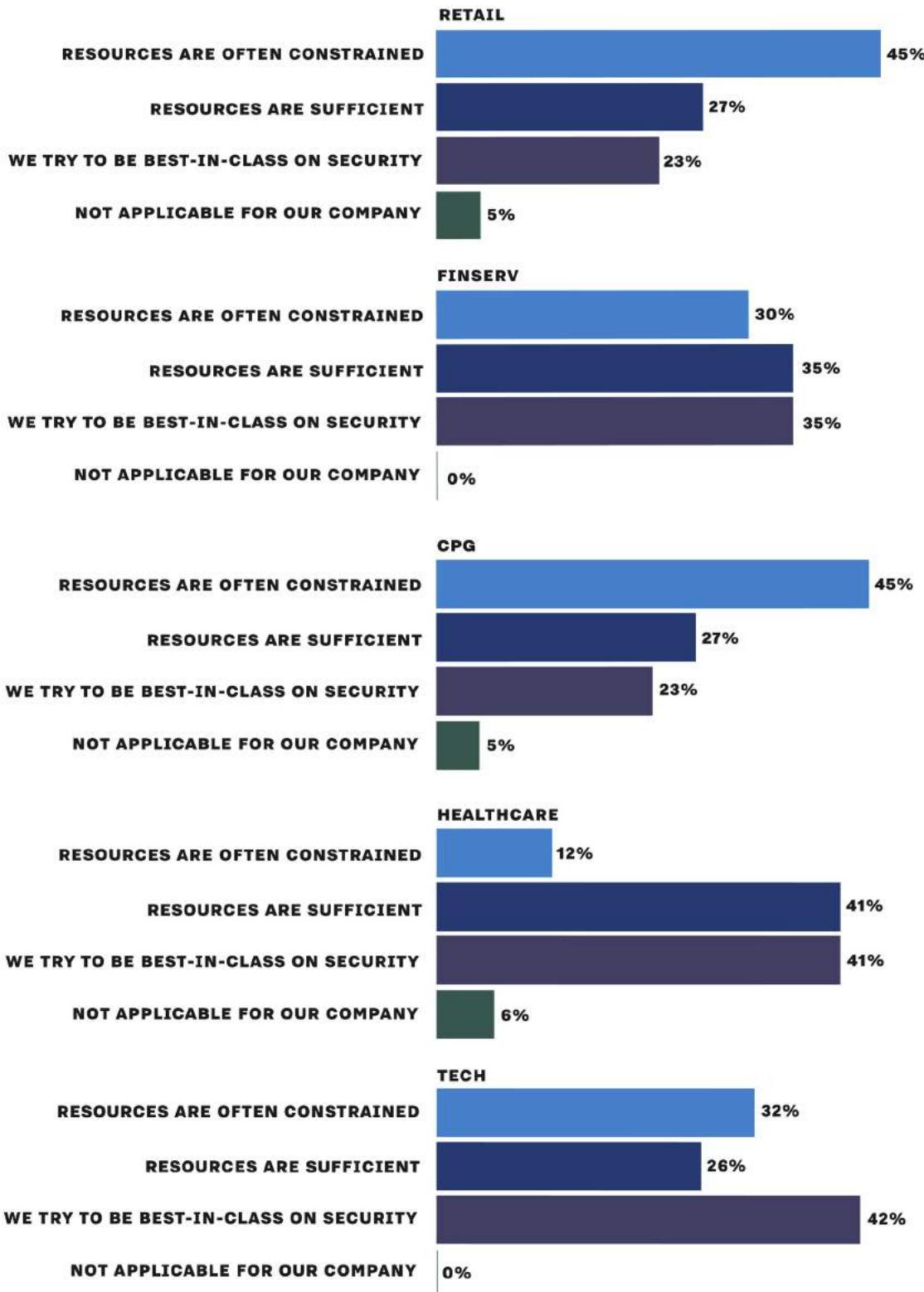
We have traditionally developed mechanical projects, and now that we have transitioned into digital, we are still developing our process for involving Information Security. — *Consumer products industry*

This is an evolving space, and has become much more focused on business and consumer outcomes in the last eight months. — *Retail industry*

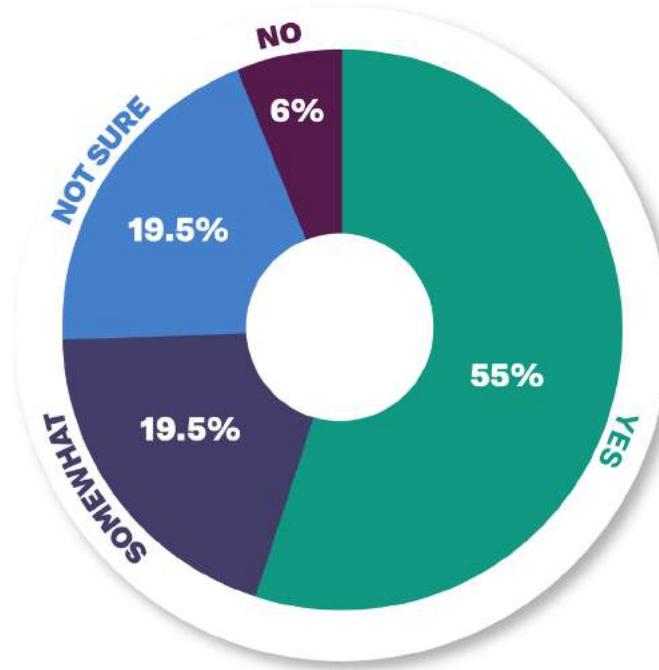
Resource sufficiency is not the issue we see here. Security is an over-used excuse, because it is effective. They hold the high ground in the fear game and use it in an off-hand (not honest) way.

— *Energy and utilities industry*

IN TERMS OF INFORMATION SECURITY, IN OUR COMPANY (BY INDUSTRY):



**OUR CUSTOMERS ARE BECOMING MORE AWARE OF INFORMATION SECURITY
(OR CYBERSECURITY/DATA VULNERABILITY) AS AN IMPORTANT PART OF
OUR PRODUCTS OR SERVICES:**



"Security is just table stakes in today's world," says Matt Joe, Chief Technology Innovation Officer at Avanade, a \$2 billion IT services firm based in Seattle. "You don't want your employee data to be hacked; who would want to work for that company? You don't want your customer data to be hacked; who would want to engage with that brand?"

Joe continues, "You need to respect security protocol right from the start, as you could be baking in [things like] GDPR compliance from the start. It's easier to catch that from the start than getting an audit done later." As an example, Joe cites a platform that Avanade built that helps manage all of the innovation-related conversations that his firm has with clients around the world. It contains confidential client data, and the platform is based in the cloud. "Before I even built it, I described and architected it with lawyers and our IT department—before we even started to do the prototyping. So by the time [we had it audited, it] was a very rapid audit. It was, 'Boom, boom, boom, done! Okay, you did everything you said you would do.'"

Dedicated security staff can be a big help, says Roberto Masiero, Vice President of ADP Innovation Labs. "I have one architect who is dedicated to the

security topic... things like [user] authentication, authorization, and accounting. His title is Chief Architect." That individual has dotted line reporting into a relatively new Global Security Organization at ADP, the New Jersey-based provider of payroll and other HR services, as do other security architects throughout the company. "They have biweekly meetings where they bring up hot topics—things we should be paying attention to. It creates this collaboration among all the security architects in all the teams [so that they can]

TOP 5 INDUSTRIES...

Top 5 Industries with Customers Becoming More Aware of Information Security

1. Financial Services & Insurance
2. Technology
3. Healthcare
4. Automotive, Transport & Logistics
5. Consumer Goods / Consumer Products

share technology, share patterns and initiatives, and leverage what each and every group is doing.”

Dotting i's and crossing t's with regard to security requirements can definitely add time to projects, Masiero admits, and it can be challenging to keep the user experience “appealing and easy. But it's unavoidable; it's something that has to be done” to keep the organization off the front page of newspapers and websites for “the wrong reasons.”

As an example, Masiero mentions the ADP mobile app, which enables employees to access their pay-check information and other HR-related details. When the company first started developing it, they noted that ADP password policy required numbers, letters, and special characters like !s or \$s in user passwords. But mobile phone keyboards “are hard to use if you keep switching between numbers and letters and special characters,” Masiero says. “The concern was that people would not use it. So we negotiated and we worked with security to actually have a PIN as a password on mobile. For them, it was like ‘Oh my god, this is not possible—it's not secure enough.’ But we put in enough backchannel security measures that [a four-digit PIN] became acceptable for them.” Now, the PIN has been replaced by newer technologies like touch ID or facial recognition. But the compromise helped enable ADP’s app to become one of the top business-related mobile apps (it’s currently #2 in Apple’s business category), with more than 17 million people using it daily.

The idea that security colleagues are “always the police trying to come after us is the wrong attitude,” says Masiero at ADP. Instead, “if you bring security [in] as a discipline [and create ways to collaborate], you get that buy-in, and you get that exchange of ideas that create a better user experience.” Ideally, he says, if innovators and their InfoSec colleagues are doing their jobs right, “it should be invisible” to users. “You don’t want it to show, but behind the scenes there’s an army of people making sure your data is secure, and your experience is as smooth as it can be.”

Communicating with customers about the security of new products, says Olalla at BBVA Compass, can sometimes present conundrums. “If you say that this new feature will improve security, [they may think] that yesterday it wasn’t secure, it wasn’t safe,” he says. And “if you claim publicly that you’re a very secure environment, you’ll be attracting the hackers that love to hack those who are ‘unhackable’...so we don’t want to do that.” The right messaging can be a balancing act, like when BBVA Compass launched a feature that allows customers to turn a credit card on and off using a mobile app. (It’s useful when you’re not sure if you’ve lost a credit card—but don’t want to report it stolen yet.) The right approach can be “low-profile,”

COMMENTS: CUSTOMER AWARENESS



Selected comments from survey respondents about whether their customers are becoming more security-conscious:

Our customers suffered from [an] attack, but it also taught everyone in the value chain a lesson.

— *Industrial manufacturing industry*

A continuous stream of stories in the media makes this topic more prevalent than ever.

— *Media and telecom industry*

We have had multiple email hoaxes sent out in our name. Data breaches are high-profile these days. Just look at the press from the recent Facebook and Google breaches. — *Energy and utilities industry*

Becoming an important topic, particularly with the move to cloud-based storage.

— *Automotive, transport, and logistics industry*

We have lost customers/sales due to our lack of fundamental skills in this area as a company.

— *Pharmaceuticals and life sciences industry*

The risks inherent in complex technology are becoming harder and harder to define. I don’t think our average customer understands the risks as deeply as they should. — *Technology industry*

High-level security questions are being raised in [the] initial meeting. — *Business services provider*

Not yet that big an issue [for customers]. We are aware of the importance within [our company].

— *Energy and utilities industry*

As we create few digital products, this is not something that our consumers talk about; however, we know that it will become increasingly important to them. — *Retail industry*

Olalla says, doing things that are “state-of-the-art in security, and letting the customer feel it” rather than being constantly reminded of it.

Chief Information Security Officers, says Matt Joe at Avanade, “are not there to make your life miserable. They’re there to protect the company and to protect you. If you bring them in as partners up front, you’ll be in much better shape. Innovation will feel rapid.”

But as more companies build systems that interact with outside parties, like software-as-a-service providers or business partners who offer APIs (application programming interfaces that allow two systems to interact), ensuring that you’re adhering to security policies gets much harder. In the startup arena, in particular, a fledgling company “might have the most interesting IP for machine learning” for a particular industry,” says Joe. “It could be a phenomenal algorithm, but if they can’t prove to us they’re secure...and they can’t be hacked....ultimately, that’s my reputation, and our ecosystem’s reputation, [on the line.]”

Those issues can be major pitfalls when large companies try to work with startups. Creating a screening criteria for startup partnerships may involve hunting for those who’ve worked with larger customers before—and can pass a security audit. “If we’re talking to a startup that doesn’t have any active deployments of their product, working with HCA Healthcare is probably not in their best interest or ours,” says Wedemeyer. “They’re not going to have the maturity that we’re going to require to work within our system. They’re also not going to be able to scale if we find out the solution works, and scale is very important to us.”

Creating Exceptions, Changing Regulations, and Working with Startups

There are sometimes instances where an innovation team may want to create a “sandbox” environment for testing a new concept; develop a shorter version of a lengthy and detailed contract; or get a lighter-weight security review to work with a startup on a pilot project.

“If this is the first time the standard operating procedure has to bend, understand the risk profile and don’t ask for the whole enchilada,” advises Pelletier. “Start small with a limited area, or for a specified amount of time, to evaluate the risks.”

One anonymous survey respondent at a large health insurer noted that “policies can be changed or modified, [but] pick your battles...policy and regulatory changes are a lot of work, and they are slow. Will you be on to the next thing by the time you get what you need from a policy?”

Innovation teams also need to be sensitive to introducing so much risk that they start creating

TOP 5 INDUSTRIES...

Top 5 Industries that Say Information Security Resources are Often Constrained

1. Consumer Goods / Consumer Products
2. Financial Services & Insurance
3. Technology
4. Pharmaceuticals and Life Sciences
5. Business Services / Service Provider

excessive friction with the rest of the organization. At HCA Healthcare, Wedemeyer’s team might say that “we’re going to wall off this technology or solution, so we’re not actually tying it into any of our [systems], and that’s okay. Or in a certain situation, you might say, ‘This vendor that has a technology that we want to test, but portions of their platform introduce risks or backdoors into our system, and we don’t like it, and the vendor won’t do anything about it; we’ll shut the project down.’ Again, we’re here to support the organization and advance its strategy. ... If the risk meter goes too high on something we’re trying to introduce, then we’ll shut it down.”

With regard to the latter example, Wedemeyer recalls a third-party vendor that he wanted to work with to solve a specific problem that was a high priority for HCA. “We were going down the path of getting ready to launch that proof-of-concept when our security assessment caught something in their technology stack that created a back door in our systems,” Wedemeyer explains. “As a result of that assessment, we went back to the vendor and said, ‘What do you want to do it? Here are some suggested solutions to maintain the relationship and to keep moving forward.’ The vendor didn’t want to do anything about it, because it involved him pivoting and doing new things. ... We said, ‘It was nice working with you, but we can’t in good faith pursue development of a solution like this inside our environment.’ We then went back to drawing board, and said, ‘This is still a problem and still something we need to solve, so what do we do about it?’” HCA wound up taking an internally-developed system that had been created to address a different problem and adapting that.

Developing the ability to negotiate with regulatory, legal, and, security groups is essential for innovation teams, as not every idea can be tested or executed within the existing boundaries and constructs. “In many cases,” says Burns at Reliant Energy, “it’s be-

cause the constructs were designed years ago.”

One example: using iPads to allow customers to sign-up for new products and services from Reliant. “The original [state] rules were not written around that,” Burns says. His team worked the regulatory team at Reliant’s parent company, NRG, to have the rules of the Texas Public Utility Commission modified. “So regulatory not only provides us feedback on the current rules, but...we sometimes provide regulatory [with] requests for changes to rules to accommodate some of the new things we’re doing from a customer experience perspective. We know that paper contracts versus giving customers the opportunity to enroll electronically is a customer experience improvement. So NRG’s regulatory team worked with the Commission to make those changes.”

At Sanofi, Jovanovic says that constructive relationships need to be able to include lots of give-and-take, while keeping the high-level objectives in mind. “Reminding everyone about the objective, why we are doing this, and what are the meaningful versus not meaningful outcomes of a project” is important, she says. “For instance, when a risk colleague comes to you and says, ‘If we launch this in Bangladesh, it will be a complete disaster,’ your response might be, ‘Maybe it will be a complete disaster in Bangladesh, but that doesn’t mean we stop it in other countries.’ Or we validate why it would be a disaster in Bangladesh and see what can we do. Remind everyone why we’re doing this and the objectives. If somebody says, ‘If you include this feature, you won’t be able to launch in India because of x, y, and z,’ you need to ask yourselves, ‘How much does that feature matter? Is that feature part of the core vision, or is it something that was added along the way, and we don’t really need it?’ You have to constantly evaluate what you’re aiming for.”

Will projects sometimes get killed, if they can’t hit the criteria set up by the security, risk, or compliance teams? Absolutely, says Danielle Winandy, Chief Innovation Officer and head of the RISK Innovation Office at BNP Paribas, the Paris-based financial services firm that counts about 30 million customers. “We’ve had projects cancelled and killed, and we will have more in the future,” Winandy says. “We are in a highly-regulated environment, [and so] if we do not comply with those security/risk/compliance matters, there’s no way the project will go forward.” Centralizing innovation work and responsibility, she says, is one way to make sure that new initiatives are taking compliance and security issues into account. “We are part of a *big* corporate,” Winandy says, “and we have to play according to the rules.”

COMMENTS: COLLABORATION



Selected comments from survey respondents on their experiences working with risk management colleagues:

It really depends on the mindset of the colleagues. If our job is to make [their job] easier, then it’s a battle. If the mindset is to protect what we create and to recognize risk in all new development, then it’s beneficial and collaborative on a number of levels.

— Technology industry

Different cultures and objectives. There seems to be a naturally built-in tension [when two different groups] have different approaches to progress.

— Technology industry

You need to share the vision, present the business case, [and] demonstrate transparency to create trust for best results.

— Engineering and construction industry

They are paid to be paranoid. Anything new scares them. — Energy and utility industry

Things take time, so I expect it to add time to the process. — Consumer goods and products industry

Innovation is about welcoming different and diverse perspectives, so views coming from InfoSec and legal are very welcome at each stage.

— Technology industry

We have missed some opportunities due to speed/slowness; however [we] have also dodged some bullets through the rigor and consideration.

— Pharmaceuticals and life sciences industry

We have a great legal team that goes out of their way to say “yes.” — Financial services industry

We struggle to have startups pass the “audit” test regarding how they are organized in terms of their IT systems. Also [we can encounter issues] with legal on terms and conditions of engagement. Due diligence is very strict. — Financial services industry

It can take 18 months to get a legal agreement executed before we even start developing a prototype. IT resources are often spread thin, and delays of weeks or months occur. — Energy and utility industry

COMMENTS: COLLABORATION

CONTINUED...

There is willingness to support from the different teams; [however,] sometimes there is lack of experience. — *Automotive, transport and logistics industry*

We have excellent partnership with our cybersecurity team; they help us design products and [fix flaws]. However, there are other areas of legal and compliance who are not well-prepared for new types of products and markets. An example: we are launching a connected device with an app, and our compliance team was helpful with providing FDA requirements. Cybersecurity took care of all the right types of audits and testing we needed. [But] we don't have access to legal resources who can help approve a terms and conditions [document,] because we're building new payment infrastructure.

— *Consumer goods and products industry*

In general, they do slow us down, but much less so than if we waited until later to engage.

— *Financial services industry*

Could I go lower [than necessary evil]? Been the absolute worst part of the job for me. It more than slows down progress. It's a legitimate obstacle, and I have had to shut projects down completely or take them completely off-site due to their intransigence. Our folks would try to negotiate with Microsoft and object to the terms required for use of Word or Excel, strictly for posturing purposes. [They would] try to show value and assert authority by saying no. Do I come off as irritated or unimpressed? Shakespeare was right. ... Feels good to vent—thanks for the survey. — *Pharmaceuticals and life sciences industry*

At a prior employer (a global automotive manufacturer), the InfoSec leader was rather proud of putting the NO in inNOvation. — *Financial services industry*

I understand the need for it, but disagree with their approach. — *Automotive, transport, and logistics industry*

Working through these processes/teams is very, very painful. It takes a long time to get approvals. Sometimes it also feels like an interrogation...

— *Technology industry*

They help us improve product and pilot design, and are highly responsive and knowledgeable.

— *Healthcare industry*

It should be a net positive, but until security and compliance become as embedded as legal with our team, they will always (through no fault of their own) see things through the lens of the mother-ship—period.

— *Automotive, transport and logistics industry*

Teams are not available to provide the necessary bandwidth to serve rapidly-progressing innovation initiatives. [They also] may lack the right balance between practicality and risk-aversion that would enable a more agile and innovative environment...

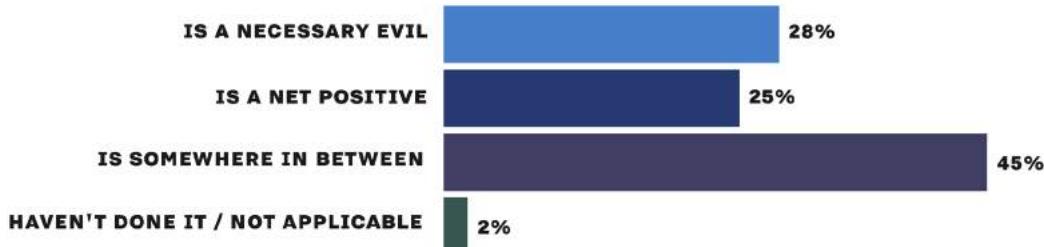
— *Government/public sector*

The first time we contracted for cloud services was a nightmare. Many framed it as a job threat (and acted accordingly). We stuck to our guns and eventually won, but the project timeline was doubled. [There was a] co-conspiracy between procurement and IT to slow progress (policy was the weapon of choice against us). — *Energy and utilities industry*

It can add two to three months to our project rollout for legal and compliance to verify we have met all the requirements in order to provide a product or service to our customers. — *Government / public sector*

The challenge is that we are trying to handle [legal agreements] one-by-one with each deal or partnership; we have not found a systemic resolution that is repeatable and scalable. — *Technology industry*

WORKING CLOSELY WITH INFORMATION SECURITY, LEGAL, AND COMPLIANCE COLLEAGUES, IN MY EXPERIENCE:



From 'Necessary Evil' to 'Net Positive'

Can every innovation team live in a world where they see compliance, legal, and InfoSec colleagues as a “net positive” rather than a “necessary evil,” or somewhere in between those two poles? It’s a worthy goal, since friction and infighting not only slow down progress, but can eat away at the drive and motivation of everyone involved in trying to push a project toward the launch pad.

But there’s only so much that attentive listening, regular lunches, and even embedding staffers on your team can do. Senior leadership knows that compliance, legal, and InfoSec are crucial functions of the company. As Jovanovic at Sanofi puts it, “I don’t think you can go to any CEO and tell them your legal, risk, and compliance is not a meaningful part of this company. They all firmly believe that it is.”

So if those same leaders also believe that innovation needs to be a meaningful part of the company, they need to be involved in ensuring that the right metrics, incentives, and oversight are in place so that new offerings can be developed, tested, and rolled out at a reasonable pace, with the appropriate inputs from the organization’s risk managers. Are compliance, legal, and InfoSec allocating the appropriate resources to their work with the innovation group? Do staffers need to be embedded or rotated through? How often are staffers in compliance, legal, and InfoSec simply saying that no new risks are acceptable, versus outlining ways the innovation team can proceed with small-scale tests?

As one anonymous survey respondent suggested,

senior leaders in some organizations may need to consider adjusting the mandate of compliance, legal, and InfoSec groups so that they aim “to facilitate innovation through managing risks, instead of [facing] significant consequences for taking any risks whatsoever.”

The expectation that innovation teams will move quickly; act entrepreneurially; talk regularly to customers; explore new market opportunities; embrace new tools and technologies; and run “quick and dirty” tests to gather data about their ideas naturally introduces new risks into the organization. Stasis is generally not threatening to risk managers—but experiments and change are.

CEOs and other senior leaders need to understand that it’s vital that innovation teams and compliance, legal, and InfoSec staffers build trust and good working partnerships. That may involve some refereeing in the early days of a new innovation program, some expectation-setting, and some oversight. But if innovation and changing how things are done is truly a priority for the organization as a whole, the dynamics of this partnership are far too important to be left to chance.

Guardrails and traffic signals are essential safety features in every large organization. But when traffic gets knotty and things bog down, it diminishes the organization’s competitive advantage. Customers notice. The objective, if your leadership believes that nimbleness and speed matter, should be a constructive and on-going collaboration between innovators and risk managers that enables the organization to grow and serve customers in new ways. ♦



Natalija Jovanovic, Head
Digital Catalyst, Sanofi

Guidance & Tools

Advice from Survey Respondents: Building Stronger Relationships with Colleagues in Risk Management

1. GET THEM ON YOUR TEAM, OR AT LEAST HAVE A DEDICATED CONTACT IN THESE DEPARTMENTS

“Get them involved at the beginning and understand the value they bring to the table.”

“Try to have them as members of your core team.”

“Each team should have a designated representative from the InfoSec, legal, or compliance team aligned with the product/innovation team via a matrix organization. That rep should be able to join regularly team meetings to insert their expertise as appropriate and to provide a single point of contact for the product or innovation team to use for that subject area. That rep should also be an expert in explaining why certain decisions are made or requirements are needed.”

“Find the people that can relate to innovation and build with them. Help them get excited.”

“Form a multidisciplinary team. Set forth a clear, motivational challenge and ask the team to solve it.”

“Get them to put someone in your team. Otherwise they will always be ‘the other’ to you, and vice versa.”

“Don’t treat those roles as a gatekeeper that must say yes; treat them as integral project team members.”

2. STANDARDIZE FORMS AND COMMON ACTIVITIES

“Create standard forms that can address most of the [common] cases [you deal with]. Only customize when needed.”

3. TRANSPARENCY, RELATIONSHIPS, AND CONSISTENT COMMUNICATION

“Transparency and frequent communication...what

we call ‘innovation through collaboration.’”

“Help them understand the business benefit of what you are pursuing—but also show appreciation for the important roles that they play in mitigating risk for the business.”

“Involve, train, and listen.”

“Don’t email... Pick up the phone and talk to them.”

“Talk to them in person.”

“Explain the challenges a small innovation team or new product faces in being fully compliant from Day One.”

“Take a positive-intent attitude when colleagues say something can’t be done... [F]ind out the ‘why’ behind the answer, and see if common ground can be achieved to get to a ‘yes’ or a compromise that meets their obligations and still gets to some or all of your needs. Remember that life is not a straight line; policies can be changed or modified, [but] pick your battles...policy and regulatory changes are a lot of work and slow[.] (Will you be on to the next thing by the time you get what you need from a policy?)”

“If they operate in a technical vacuum, they will always over-constrain projects to de-risk them 100 percent. This is not practical. To get them to be realistic (i.e., accept that risk is often synonymous with profitability), you need to socialize them to the world in which you operate. Namely, the world of the customer.”

“[Help them understand] that a one-size-fits-all approach doesn’t work. [It] slows down both innovative work, and hinders ideas that push the boundaries of what the company could do.”

“Blanket approaches have not been that valuable for

me. I remember people are individuals and try (not always successfully) to let them teach me what will work.”

“Communicate the vision and opportunity. Gather the required data for informed decisions.”

“Complete risk/opportunity assessment. [Make] everything transparent. No fear.”

“Make sure they know you have security top-of-mind, and you care. If they feel that from you, they will be better partners.”

“Take them on a ‘vision’ experience/trip, etc. to show them what you are envisioning—paint them a picture of the future.”

“Take them to lunch.”

4. TIE YOUR WORK TO STRATEGIC THEMES

“Find common ground, and tie innovation work to strategic themes.”

“Identify win-win situations between the teams and act like partners.”

“Try to link [your work] to strategic issues.”

5. START EARLY

“Bake them into the process from Day One.”

“The earlier you understand their viewpoint and concerns, the sooner you can adjust your project/program to a win-win situation (assuming an adjustment is needed).”

“Build personal relationships, and take the responsibility and energy to help define and explain the value of innovation and tech development. They don’t have time, like all of us.”

“Pick your battles selectively... Give on the items that may be less impactful to your project, but hold strong on the critical elements. Seek their advice first, rather than telling them what you need. Most folks wait until the last minute and make everything a crisis.”

6. PRACTICE EMPATHY

“EMPATHY! Treat them like your partner if you want them to treat you like their partner. Involve them early and let them define what cadence/format they should be updated with. Don’t expect them to like surprises—it’s their job to make sure there aren’t any!”

“Take the time to have coffee with a colleague in each of these areas. Speak honestly and openly with them. Always practice empathy.”

“Put everyone on the same side—helping protect and grow the company—and keep them in the loop as much as they are willing to engage.”

7. GET IT IN WRITING

“Don’t consider it ever checked off the list; you need to continue to engage these teams. The responsibility is on the project team to engage. If you wait for them to come to you, the result will not be good for your project. Always get guidance and approvals in writing. Sometimes people change jobs—or forget—and you don’t want to have to start over.”

8. OTHER ADVICE

“Mindset is key. [Most companies] need more people in [security, legal, and compliance] roles that can envision a path to the future.”

“Momentum is the most powerful thing an innovations team can have, and the team has to guard it as sacred. Don’t let anything get in the way, even if it’s your own people. Try to go with them first, and if they won’t help, go over them, and if you don’t have a corporate sponsor to help you do that, go around them (and let the chips fall where they may). Just don’t stop and politely wait for them to move. At that point, all you have left is hard choices, and the least damaging one is to just go forward alone, because no one is going to allow you to blame someone else for your lack of success.”

“I believe these relationships and their functions are absolutely necessary, but the pace of the markets are quickening, and it feels like additional staffing will have to be put in place for them to keep up.”

Worksheet: Building Strong Relationships with Colleagues in Legal, Compliance, Security

We created this status report worksheet based on survey data and interviews with innovation and technology leaders in large companies. It highlights six steps of creating productive working relationships, and invites you to evaluate and continually update your status. Where do you stand on each step? Fill in the appropriate color in the “Our status” column.

Status Key — **Gray**: Haven’t done it yet. **Red**: Serious issues. **Yellow**: Room for improvement. **Green**: In good shape

		Our Status	
1	Identify	For your work in general (or a particular project that will require review), identify the departments and teams you need to engage with to get legal, regulatory compliance, information security, or other types of risk management reviews and approvals. Who are the individuals who have go/no go authority? Is there a specific contact in each group that we will regularly work with? Might we have a legal, InfoSec, or other risk management team member “embedded” on our team, either full-time...one day per week...one week per quarter?	
2	Align	We understand the mission and operating procedures of our risk management counterparts — and we have explained our mission and focus to them, and how we expect to operate. We have jointly discussed the stage at which we should seek their involvement in our projects.	
3	Define the relationship	We have defined whether there will be regular standing meetings, or meetings as necessary. We have defined whether we will be coming before them as part of their process, or they will be coming before us as part of our process. We have agreed upon how we will document compliance and adherence to risk management protocols.	
4	Exceptions or new processes	For early tests and new collaborations, we have defined whether there are exceptions to "standard operating procedures"; simpler or more streamlined processes/reviews; or new contracts, forms, or technology "sandboxes" that can be created so that innovation work is carefully reviewed, but in a way that is appropriate for the stage or scale of the project. We have also clearly defined the boundaries of these tests or collaborations (i.e., just with 100 customers, in one market, only in the sandbox, etc.)	
5	Effectiveness	Projects are making it through the review and approval process in a timely way, with appropriate input from our risk management colleagues.	
6	Conduct check-ins and review metrics	On a regular basis, we check in with our leadership or governance committee about how risk management reviews/approvals have been going. We review metrics related to how early reviews start, how long they take, how many projects successfully make it through the process, and the level of resources that risk management teams have been dedicating. We discuss what may require adjustment going forward.	

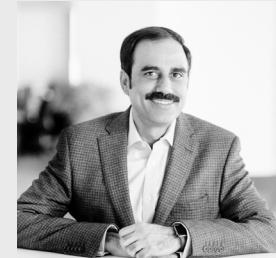
* You can download this worksheet in Excel form at innovationleader.com/resources — click the tab at left that says ‘Innovation Leader Resources.’

GUIDANCE FROM OUR SPONSOR, MASTERCARD

Innovating to Deliver Cutting-Edge Security Solutions

AJAY BHALLA, PRESIDENT, CYBER AND INTELLIGENCE SOLUTIONS, MASTERCARD

What does it take to be innovative when time is against you? In the security space, criminals are relentless and barely a week goes by without news of another cybersecurity attack, breach, or environmental threat. That's the world we live in. We need to innovate and out-innovate, because criminals are always thinking of creative ways to bypass systems, no matter how many obstacles we place in their way. Innovation leaders know that developing products in a vacuum is neither effective nor efficient. But in many companies, that is exactly what happens. You know it's important to work with product and marketing teams to brainstorm new and creative solutions, but that thinking may not be instinctive when it comes to the security space. While information security, cybersecurity, legal, and compliance teams often work together on programs and initiatives, these teams may be missing out on the insights that other teams can offer if they are not engaged regularly in product development exercises that demonstrate a diversity of thinking.



Ajay Bhalla
President, Cyber and Intelligence Solutions, Mastercard

WORK ACROSS THE ENTERPRISE

That's why Mastercard has consciously embedded innovation throughout our organization. We've introduced employees to Design Thinking, using a human-centered approach to solving problems. While not new, this methodology has been used successfully by companies to enable employees to consider different perspectives around the consumer's needs. Members of our security solutions, compliance, and legal teams all attend these workshops to familiarize themselves with the process, and it has really made an impact on how solutions are conceived and implemented.

This thinking has enabled us to work closely with people across the enterprise to create solutions and best practices based on customer needs, pain points, and opportunities. We are always asking, "What can be done better?"

We believe it's not a choice between security or innovation—both work hand-in-hand to secure trust with customers and enable consumers to make purchases every day. Technologies like biometrics allow us to deliver on both to scale because it helps everyone. All of this requires continuous innovation across our organization as well as a constant eye on security. At Mastercard, this ensures that when our cardholders are ready for the next-gen technology, we are already there with an innovative solution that is secure and trusted. This model has proven to be consistently successful.

INNOVATION STARTS WITH LEADERSHIP

Technology and innovation has changed payment behavior and patterns to such an extent that the entire way we shop has been altered. And our organization needs to change too. Purchases can be made anywhere, in multiple ways, with different payment devices, whether at a desk or on a mobile phone.

Working with our innovation teams, we've helped to create solutions that enable people to safely shop online with any number of devices. It has allowed us to be pioneers in data analytics, artificial intelligence (AI), and predictive analytics, and helped us to develop new and better ways for people and businesses to interact safely and securely. An example of this is the introduction of Decision Intelligence, a solution that

uses AI technology to help financial institutions and merchants increase approval rates online. And when it comes to approving purchases, accuracy matters. Decision Intelligence learns, predicts, infers, and makes data-driven, real-time decisions that are tailored to each account. It's all about securing the payments ecosystem now and into the future.

WHAT HAVE WE LEARNED?

Collaboration is key. None of these innovations would be possible without the close partnerships we have with retailers, mobile phone networks, internet providers, utilities, event organizers, banks, airlines, local transportation authorities, governments, and many more.

These partnerships have led to many security breakthroughs that not only deliver the best way to pay, but also the safest way to pay.

In addition, we partner with startups from around the world that are developing niche technologies in payments to make life simpler and more convenient. To help these companies make a bigger impact, we've created Mastercard Start Path, our global initiative to provide startups with the operational support and commercial access needed to scale.

Setting high industry standards benefits all. We also work closely with leading industry bodies, such as payment partners, to develop standards like chip, QR codes, contactless, authentication, and Secure Remote Commerce (SRC), a standard checkout button that will provide consistent online experiences for consumers no matter where they shop. These relationships benefit the entire payments ecosystem, encourage all partners to work together, and ultimately inspire additional innovations that move the needle for the entire industry.

Collaboration comes from within. In addition, our tech hubs are great examples of how we have evolved our innovative work environments. Teams from across disciplines sit together in "neighborhoods" and develop solutions and initiatives to test ideas and product designs. This collaborative approach will set innovation teams apart and help to build successful programs within organizations.

Embracing collaborative models has also informed our new approach to AI: collaborative intelligence. This is an innovative way of linking payment elements to build trust and enable a better payment experience for consumers. It's all about bringing together the right players to ensure effective, connected, and ethical use of AI technology.

EMBRACING THE DIGITAL FUTURE

While no one can predict the future, we can say with certainty that innovation will be paramount as fraud moves more and more into the digital world.

Tackling one of the biggest problems our society faces today—security in cyberspace—will take thoughtful innovation and enormous collaboration. We know it's not just devices getting smarter. Cybercriminals and fraudsters are, too. That's why our DigiSec Lab in the UK is another innovation that proactively tests threats in collaboration with government, security agencies, academics, and other partners, to help prevent attacks our customers couldn't detect on their own.

And our use of AI in our global payments network has enabled us to deploy an active fraud solution saving our customers tens of billions of dollars—and it runs on all transactions across the globe 24/7. In innovation terms, AI provides a unique and necessary capability to handle the ever-increasing flow of data and ensures that intelligence can be extracted. But the challenge is to look enterprise-wide. Working collaboratively is necessary to maximize the potential of AI to transform your business.

OUT-INNOVATING THE CRIMINALS

We know safety and security are top priorities for our customers, cardholders, merchants, and other partners. And we're proud of the work we do to constantly innovate in the security space. For nearly 60 years, we've been trusted to keep payments safe. That trust gives us the license to innovate. It has allowed us to create the most secure and advanced network out there—and enhance it to meet the needs of a changing world.

As technology advances, devices change, and payment methods adapt, we continuously innovate to ensure the safety of billions of electronic payments wherever and whenever they occur. Our goal is to build a world beyond cash where every person, every payment, and every device is protected. With an innovative mindset, we can stay ahead of our opponents.

For innovation managers, this means being ambitious about your programs and protocols. Be sure to partner with your security, compliance, and legal teams and help them infuse an innovative mindset within all their programs and initiatives. It won't take long to notice the results. Innovation is a real power when the entire organization works as one. ♦

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So You're Trying to Innovate in a Heavily Regulated Industry...

BY NAOMI FRIED, INNOVATION & DIGITAL HEALTHCARE LEADER;
CONTRIBUTING COLUMNIST



Several years ago, my innovation team at Boston Children's Hospital came up with the idea that our doctors could provide care virtually, via videoconferencing, to critically-ill patients in small community hospitals. We brought this idea to the legal department, where it was met with scowls and deep skepticism. Our lawyers were worried about patient consent, physician licensure, medical liability...the list of legal and regulatory concerns they had around this innovation in care delivery went on. And on. And on!

But after many conversation and much hard work, we ultimately launched our “Teleconnect” program to help critically-ill kids in other hospitals. Our legal team provided invaluable guidance and advice. Ultimately, they even became internal advocates for the Teleconnect program.

The importance of innovation is widely accepted. Every company must innovate to survive and thrive, and to avoid being overtaken by peer companies—and upstart firms—that are themselves eager to gain a competitive advantage.

But engaging in actual innovation is far from easy. There is experimentation, testing, tinkering, and—sometimes—significant risk-taking. Often, the outcome is failure. In short, innovation with its risk of failure is SCARY.

In industries that are heavily regulated—such as pharma, healthcare, insurance, and banking—there are additional barriers to innovation. Legal, compliance, and regulatory requirements can loom large, and have the potential to stifle innovation—if you don’t address them head-on.

Nevertheless, innovation can thrive in large organizations in heavily regulated industries. I know. I have been working on innovation in regulated industries for over a decade now. I have facilitated innovation within health plans, hospitals, and bio-pharma companies.

Here are seven tips to navigating the internal legal and regulatory roadblocks to innovation that you often encounter in these kinds of organizations.

...

1. BUILD RELATIONSHIPS PROACTIVELY WITH INTERNAL REGULATORY AND LEGAL FOLKS

That’s right. Seek out—don’t avoid—the staff responsible for legal, regulatory, and compliance within your organization. Innovators sometimes think they are better off steering clear of these gate-

keepers and guardians for as long as possible. That is a mistake; you can't avoid working with these folks. If you don't find them, they will still find you!

Don't wait until your innovation is "ready" to talk to your regulatory colleagues. Rather, invite the legal, regulatory, and compliance folks into early conversations about innovation.

It's best to discuss your innovation project when the stakes are still low, at the beginning of the innovation lifecycle. Give them time to digest the new idea. Let them provide input and guidance in the early stages, at a time when you are still able to shape and mold the innovation.

I found the regular monthly meetings we set up with our legal team at Boston Children's Hospital gave us the time and space to discuss issues that were emerging around the deployment of our "Teleconnect" videoconferencing innovation. Because we discussed our plans well in advance, these meetings were calm and collaborative. While it's great to have informal check-ins, nothing beats regularly scheduled meetings for making sure legal and regulatory partners are up-to-speed and on board with plans.

Also, regulatory folks are less defensive and more open in the planning stages than after considerable resources have been invested in the innovation. Don't wait until the idea is fully baked or tested to share it with legal and regulatory.

What if you still encounter resistance? Is it time to go over the heads of the lawyers, pull rank, and bring the CEO in? Sure, this approach can quickly break through an impasse. But I would not recommend it in an organization where you are trying to repeatedly innovate over time. This type of maneuver is likely to alienate your legal partners and make it harder, not easier, the next time you seek their support or approval.

In discussions with the legal and regulatory folks, it is important to continuously reference the importance to the business of the innovation. Remind them that shutting it down or blocking it is not an option because it is bad for business. That will keep the lawyers at the table and keep them focused on finding ways to drive the innovation forward.

2. FIND A CHAMPION WITHIN YOUR LEGAL AND REGULATORY DEPARTMENTS WHO IS INTERESTED IN INNOVATION

Find an innovation partner—someone you can work with throughout the project (and perhaps eventually on multiple projects over time). This internal innovation partner can help you navigate not just your organization but also the industry. Having a legal or

regulatory innovation champion also lends internal credibility to your project.

Wondering where to find this legal or regulatory innovation ambassador? Be open to an innovation partner from any of your organization's legal or regulatory groups. Your legal innovation champion could be a seasoned lawyer or a more junior attorney who is interested in innovation.

At a biotech company I worked at, my regulatory champion on a social media initiative turned out not to be someone who was assigned to this domain, but rather a relatively new lawyer. He had recently joined the company and was thoughtful, caring, and interested in exploring the possibilities of social media. He was willing to work with us and serve as our champion, creating a bridge back to other regulatory experts in the organization.

3. REFRAME THE CONVERSATIONS

The easiest and safest thing for legal and regulatory folks to say when confronted with innovation is "no." To avoid a conversation that ends in "no," try to reframe the discussion. Get your legal partners to speak in terms of "yes, but." That is, "yes, you can try that idea, but here are the restrictions." Or perhaps they can provide a "yes, with" answer. "Yes, you can innovate but with certain constraints." These "yes, but" and "yes, with" conversations provide space for exploration and potential for innovation—unlike instant "no's." Reframing can be done by asking

"What if you still encounter resistance? Is it time to go over the heads of the lawyers, pull rank, and bring the CEO in? I would not recommend it in an organization where you are trying to repeatedly innovate over time."

NAOMI FRIED, FORMER CHIEF INNOVATION OFFICER, BOSTON CHILDREN'S HOSPITAL

questions and exploring hypothetical scenarios.

At Boston Children's Hospital, when we began planning our first hackathon, the question of who would own the intellectual property that was generated came up as planning for the hackathon progressed.

The initial response from our lawyers was that the innovators could not own any IP developed at our hospital-sponsored hackathon. But over the course of a series of discussions, we were able to reframe the conversation. Ultimately, everyone agreed on a mechanism for sharing IP between the hospital and the innovators (outside entrepreneurs, inventors, or designers, for instance).

4. RECOGNIZE FOLK LAW

In regulated industries, there are certainly rules that need to be followed and laws to be aware of. However, there are also often grey areas—where the law is not clear. Innovation frequently occurs in uncharted territory, where regulations may not be well defined. Often in the absence of clear laws and regulations, people rely on “folk law.” Folk law is not real law. Rather it is the way things have always been done or the assumptions people have always made—and thus is treated by some as if it were a real regulatory constraint. Folk law develops as a result of what people are familiar with and comfortable doing. Once restrictions are identified as “folk law,” it becomes easier to move past them.

At a biotech company where I worked, our legal team was initially uncomfortable with executives tweeting. But once we began to discuss the source of their discomfort, it became clear that the concern was rooted in the fact that none of the executives had ever been active on Twitter. The “folk law” that “executives can’t tweet” crumbled once it was identified. Soon after, the regulatory team issued a set of internal policies and guidelines around the use of Twitter by employees.

5. TRACK THE COMPETITION

Legal and regulatory folks are not always comfortable having their organization be the first to innovate and chart new territory. However, when other organizations in the same industry are innovating and pushing the envelope, in-house legal and regulatory experts become more comfortable with their organization doing the same.

There is a sense of “safety in numbers.” Tracking how your competition is innovating can help you make the case for innovation with your internal legal and regulatory experts.

6. COMMUNICATE BROADLY

Strong internal communication is always important when innovating. Effective, broad communication across the organization is even more vital when innovating in a heavily-regulated industry. Why? In regulated industries, other folks in the organization besides the legal and regulatory experts may also worry about innovation-related risk. Developing a broad communication plan that reaches all areas of the organization and keeps folks regularly updated can make the difference in overcoming internal resistance to innovation.

When I was Chief Innovation Officer at Boston

Children’s Hospital, we had monthly forums where we shared updates on our innovation programs. I continuously made rounds to all the clinical departments at Boston Children’s to provide updates and information to the doctors and nurses there. And we produced an annual innovation report that proved a great way to disseminate information about our progress on a yearly basis.

7. BE PATIENT

Innovation in a regulated industry takes more time than it does in other industries. There will often be folks who are uncomfortable with innovation and may raise red flags. But just because you are in a regulated industry doesn’t mean that you can’t innovate successfully. Just be patient. Celebrate progress as you make it. Focus on the ultimate goal of your innovation, and don’t get discouraged when there are setbacks. (I’ve been there!) What doesn’t work is treating legal, regulatory, and compliance folks as the enemies of innovation. In fact, they can be great enablers.

No one said it’d be easy, but with time and patience, and by following the steps above, you can bring innovation to a highly-regulated industry. ♦

Naomi Fried has held senior innovation and technology roles at Biogen, Boston Children’s Hospital, and Kaiser Permanente.

Boston Children’s Hospital



The Three Roles That USAA Labs Plays

BY SCOTT KIRSNER, EDITOR



Zachary Gipson
USAA's former Chief
Innovation Officer

A screenshot of the USAA Labs website. At the top left is the USAA logo with the word "LABS" next to it. Below the logo is a large, bold "USAA LABS" title. Underneath the title is the tagline "Discover, participate and provide feedback on our latest innovations." In the center, there is a "GET STARTED" button. In the background, two people are shown interacting at a table; one person is holding a smartphone. The overall theme is innovation and technology.

USAA Labs' web site

From drones to Alexa skills, bitcoin to facial recognition, few financial services companies are as quick to explore the potential of a new technology as San Antonio-based USAA. Founded in 1922 when a group of 25 Army officers got together to collectively insure their cars, USAA now has more than 11 million members and 28,000 employees.

We spoke with Zachary Gipson, USAA's Chief Innovation Officer, in 2018 about how his team was structured; how it took projects into production; and how it delivered on the "warmth and caring and empathy" that USAA's members expect over a digital channel.

Gipson also discussed the importance of being "passionately dispassionate."

"Passion is what keeps us going through the challenges of being an innovator in a big company," he says. "But you need to really be dispassionate about the work you do and how it can change." (In October 2018, Gipson moved to a new job at Charles Schwab.)

...

Our organization, USAA Labs, plays three macro roles in the organization. One is inspiring and engaging our employees and members to be innovators with us. We do that through our challenges and hackathons. On the employee side, 94 percent of our employees [have] participated in that program; on the member side, we have similar kinds of programs and challenges.

The second role is that of being an accelerator for emerging technologies like AI and autonomous vehicles and blockchain and bitcoin. That's the stuff that's usually written about.

Our third big pillar is around creating new forms of growth and revenue for the company—launching new businesses. Those are typically adjacencies, or things outside of our core business.

HOW WE'RE STRUCTURED

We have an organization called the Chief Technology & Digital Office. The EVP of that, Heather Cox, reports to the CEO, and I report to Heather.

In terms of staffing, we go up and down. Today we are right around 200 to 250. Those are USAA employees, full-time on our team. We have a team that leads member and employee innovation, a team focused on emerging technology work, and a team that leads our new business work.

2008 was when we stood up our formal innovation teams. Before that, it just happened in IT or product groups. But our former CEO felt we needed a dedicated function to do two things—to start our employee innovation program so we could bring every employee into this work and to have a team that was dedicated and forward-looking, versus tethered to the core business. That team was originally in marketing, but then moved into IT from 2010 to 2014. At that stage, it became more about the technology, as opposed to serving members in new ways and creating value. In 2014, I was a GM, and I got tapped to go figure out innovation.

I view 2014 to today as [being] about maturing the practice of innovation—bringing together the business and IT functions into a single team and aligning our work to the strategy of USAA. We've been putting in place a lot of the process and rigor, in terms of how we manage our work across the different portfolios we lead. We are maturing innovation into a strategic asset for the firm—not trying to be this interesting function working on disconnected stuff, or an isolated lab, but shaping the future of USAA. The Chief Innovation Officer role was created in 2015; the CINO title didn't exist before then at USAA.

As far as where the talent on our team comes from, we hire from the external market, but for most of the team, this is not job number one they've had at USAA. We have some very long-tenured employees on the team, with 20 or 30 years of experience. So that gives us a really good balance of external perspective and new skills.

If you go out and hire everybody from the outside and bring them in, they expect to do things a certain way. [Sometimes they] take an approach of, 'Everything's busted and we need to totally change everything.' That's where you can get some tissue rejection.

DELIVERING WARMTH AND CARING IN A DIGITAL CHANNEL

USAA is very mission-driven. We have a strong focus on our members and facilitating their financial security. So we always start with our members, and their needs, and how we can serve them best.

It's so easy to get distracted in a corporate innovation function. You take senior leadership on the Silicon Valley tour, you run some hackathons, and you invest in a startup. Those are all good things, but unto themselves, it's just activity. It's not moving the ball forward.

We've built a fairly broad ecosystem that we tap into. We have interacted with over 700 startups, and

brought north of 50 of them into our lab. We have relationships with MIT, and Stanford, and others, and we work with the big tech vendors, too.

One area of interest is, what happens when members interact with digital channels more than human channels? How do we replicate warmth, and caring, and empathy in digital channels? We think there's lots of potential with artificial intelligence and machine learning—and emerging devices like

"We are maturing innovation into a strategic asset for the firm—not trying to be this interesting function working on disconnected stuff, or an isolated lab, but shaping the future of USAA."

ZACHARY GIPSON, FORMER CHIEF INNOVATION OFFICER, USAA

Google Home or Amazon Alexa. You'll be able to create not just rote, static interactions but personalized experiences.

WORKING WITH ACADEMIA

For us, the bridge from academic research to eventual production was too broad of a bridge to cross. But what we've found that works well is when we have a very specific use case, and we can sit down with graduate-level folks. We work with them almost as an extension of the team. They're ideating around a problem and creating prototypes. We work with University of Texas at San Antonio, which has a big cybersecurity practice.

But part of [our learnings about academic collaborations] was finding ways how not to do things. I'm a data and information nerd. I love when my brain hurts as I sit through a Ph.D. dissertation on machine learning applied to something. The knowledge share is good, but [we are focused on] getting to something much more applied.

GETTING CONCEPTS INTO PRODUCTION

Our team is set up to put things in market—not just ideate, or do piloting and prototyping.

You can get very enamored of the ideation and testing and learning, but if you don't get things into the hands of your customer, you haven't created value. That's why we've built a strong function around [getting] an idea from a member [and taking] it into production.

There is some work that we can take straight through to production in the digital domains. If we're doing something around a specific line of business, that would [involve] a handoff to the busi-

ness to take [it] into production, because they have all the expertise on the core underlying systems. When we hand things off to the business units, we stay on top of them until it gets into production. It helps that we're co-located in the same mile-long building. We can literally show up at their door. If you hand something off, assume it won't get into production unless you keep working to get it there.

Then, there are some situations where we lead [a project] into production, but [we] pull in digital or technical resources from outside our team when we go into full production.

I like the fact that our team has the ability to put things into production. Once you hand things off, it becomes part of another queue, and if you don't champion it through, it could get lost.

When we take things into production, we make sure we're engaging legal, compliance, and risk—our control partners—very early in the process. If it's a domain where there's extra scrutiny, like our work around bitcoin, we make sure we have everybody lined up in the ideation stage. If you wait until the last minute to bring in the control partners, the answer will be no.

PROJECT EXAMPLES

On the Thursday right after Hurricane Harvey had gone through Texas and was headed toward Houston, we got a call. Our property and casualty team was deployed to the coast, and we got a call from them saying, "Hey, our members can't get to their homes, and they're not sure if their cars are lost. But we have a bunch of imagery from Cessna and drone flights, and satellite data from governmental agencies. So eight hours later, we had deployed a tool that stitched together all the imagery so anyone could go online and get a real-time view of their home and see if it was flooded. If we saw your car was underwater, we could say, "We're going to give you a check, or automatically deposit funds in your account." Then you could go out and buy a car that day. We ran that straight through to production, and hosted it on our site, USAAlabs.com. We used it again for Hurricane Irma, and the odds are that we'll have another event where it gets used.

Our bitcoin integration with [the startup] Coinbase, [which serves as a digital wallet]—we did that end-to-end and put that into production. Same with our work on banking skills delivered through Alexa—we took that straight through to production.

We did some payments-related work last year that ultimately hit the banks' money movement systems. We don't have all those core systems skills on our team, so we worked with other teams on that.

When it comes to the hand-off, one of the things I coach my team on is being passionately dispassionate. Passion is what keeps us going through the challenges of being an innovator in a big company. But you need to really be dispassionate about the work you do and how it can change.

A lot of what we pass to the business becomes different by the time it goes into production. You need to accept that this thing is like your child going off to college. He or she is going to be a little different by graduation time. We try to focus on what the key things are that we learned from members that need to persist until launch—but other things wrapped around it could change.

CREATING NEW BUSINESSES OUTSIDE THE CORE

The third pillar is an emerging pillar for us. It took around a year of work with the executive council and our CEO [to outline how we might] step in and create new businesses outside the core. We're exploring adjacencies right now and earning our way into creating new businesses outside our core. We're at the front end of that.

When you're a large, successful business—we've been growing revenue and net worth in the high single digits for a decade probably, and all our satisfaction scores are through the roof—there's no burning platform to find new sources of revenue, because the core is growing. [Creating new businesses is] the least mature, most emerging part of our time.

I'm a steward of this important thing called innovation, which is helping us serve members better tomorrow than we do today. My hope is that I make things better in my time here than they were before. ♦

Update: Gipson is now Head of Digital Investor Solutions at Charles Schwab.

Putting Emerging Technologies to the Test in a 12,000-Employee Hospital System

BY SCOTT KIRSNER, EDITOR



John Halamka, Chief Information Officer, Beth Israel Deaconess Medical Center

John Halamka is the very model of an early technology adopter. Blockchain, augmented reality, precision medicine, machine learning, digital identity, and credentialing—Halamka has tested its applications in healthcare and has an opinion. “My life has been devoted to the pursuit of innovation—attempting to embrace new ideas and new technologies before the path ahead is completely clear,” he writes on his blog, “Life as a Healthcare CIO” (founded way back in 2007).

Halamka is not only Chief Information Officer for Boston’s Beth Israel Deaconess Medical Center, he is also a practicing emergency physician, chairman of the New England Healthcare Exchange Network, and the International Healthcare Innovation professor at Harvard Medical School.

Beth Israel serves 3,000 doctors, 12,000 employees, and one million patients a year.

We spoke with him in March 2018 about his advice on bringing new technologies into a large healthcare organization—and some of the projects he has worked on recently with Amazon and Google.

...

FROM DISSEMINATION TO DIFFUSION

What you see so often in healthcare is announcements of pilots, where three people try something for a day, and it never goes anywhere. Then someone claims victory. That’s just silly.

The real measure of success is adoption. The February issue of the journal Health Affairs is devoted entirely to innovation, and it includes an article on dissemination versus diffusion. Dissemination is when I try something with blockchain, go to the HIMMS conference, and talk about it. Diffusion is when every doctor’s office—even the two doctor practice in North Dakota—is using it.

So how do you get from a pilot to dissemination to diffusion?

Having a secret skunkworks outside of production and operations never, ever works. The cool guys in the skunkworks say, “We’ve got a flying car!” And everyone in the salt mines says, “We’re on old skateboards here.”

So we’ve tried to embed innovation in operations. It’s similar to Google’s idea of 20 percent [time for employees to work on their own projects]. You have this total alignment of business owner demand with innovation. It’s not IT trying something, like a 3D, holographic iPad. It’s because a business owner says, “We have a crisis right now—bed ca-

pacity, quality, readmissions—and then IT says, “I see that crisis, and I have an idea. Let’s try that idea and see if it helps your crisis.” Then if it does, the business owner says, “Let’s drive it everywhere.”

At Beth Israel Deaconess, our most expensive real estate is the OR. It’s \$100-a-minute to keep it going. They’re expensive to build and maintain. The crisis the business owner had was that demand exceeds supply. And they said, “What can you do?”

We said, “How do you allocate OR time?” And they said [they allocate two hours for an appendectomy, whether it is being done by] an intern versus Dr. Famous, and whether the patient is an 18-year old or an 80-year old. We said, “Let’s have Amazon study our last two million operations. We’ll feed it three variables: who was the patient, who was the doctor, and what was the procedure?”

Beth Israel Deaconess has maybe 500 people who operate. So we started with 25, and said, “What if we simply re-do the schedule of 25 surgeons, and Amazon does it rather than a human? We were able to create 30 percent increased capacity in the OR.” That’s because you’re given 25 minutes, [rather than two hours,] for an 18-year old patient [being operated on by] Dr. Famous, who has done thousands of these procedures.

As a result, the administration says, “You’ve been able to free up 30 percent of OR capacity for 25 doctors. Let’s roll that out to 500, tomorrow.” The roll-out to everybody is happening now, and we have had the 25 have been in full production for about six months.

A PILOT THAT DIDN’T FLY

[We ran a pilot test with Google Glass in 2014, which involved about 20 doctors.] Google Glass is the worst engineered device ever. It’s the Edsel of IT innovation. [At the outset, we] said, “We believe the idea of a wearable technology is inherently good.”

Emergency physicians just have a hard time doing CPR while holding an iPad. [So] we went into production with Google Glass for emergency physicians. We told the patients we were doing a trial, and [the devices we used] were orange, so the patient could see it. We had incredible doctor satisfaction, getting hands-free [access to] patient data, and incredible patient satisfaction. Instead of sitting and staring at a keyboard, the doctor was staring at you.

It failed for three reasons. The battery life [of the Glass headsets] was an hour and a half, but doctors in the ER work an 8- or a 12-hour shift. So were you

supposed to carry a car battery on your back?

Problem two is it used a Texas Instruments processor so underpowered that as soon as you tried to push it to do something, like voice capture [of a doctor’s dictation], it overheated and melted the plastic. We had Glasses melting on physicians’ faces.

“Having a secret skunkworks outside of production and operations never, ever works. The cool guys in the skunkworks say, ‘We’ve got a flying car!’ And everyone in the salt mines says, ‘We’re on old skateboards here.’”

JOHN HALAMKA, CIO, BETH ISRAEL DEACONESS MEDICAL CENTER

The third was the TI processor was so old, there were no Android updates available for it. [That is especially important] around security. It was a medical device with no patching available.

We would have used it in a continuous way in full production if the engineering of the device had been sound. We do look forward to somebody—maybe not Google—creating that next-gen version of a wearable camera, voice control, and network connectivity which has 12-hour battery life and fully secure. As soon as we get that, we’ll try again.

We’re fine with failing, but we want to fail because technology isn’t ready for prime time—not because of change management or budget issues.

BUYING TIME FROM COLLABORATORS

How did we learn not to use a skunkworks approach? What we found in the past is that you get shadow IT. Shadow IT means it’s not coordinated, and it doesn’t have the rigor of controls and evaluation and prioritization. In my 30s, I was the rogue. In the 1990s, I ran a skunkworks called the Center for Quality and Value. It was meant to be this really edgy, innovative place. But even if you innovated, it was hard to sustain those innovations, because they weren’t part of the fabric of the day-to-day operations.

Today, inside my organization, the IT organization, we have the Center for IT Exploration. It has two full-time people but then [also collaborates with] about twenty part-time people [around the company]. Those twenty part-timers, some of them are in tech, but a number of them are clinicians who code and can do interesting data analytics or machine learning activities.

If you carve out a protected day or two a week [for those part-time people] to work on innovation

projects—and if it's a meritocracy—people tend to put in nights, weekends, and free time, because [the work is] so exciting.

[We don't ask the part-timers to volunteer their time, though.] I buy doctors' time. [Do I have a vast budget to do that?] My budget is 1.9 percent of the budget of the organization. So I go out and seek donations. We're a nonprofit; I'll go out to our trustees or people in industry and say, "Would you contribute \$100,000 to fund a series of innovations that are going to improve patient experience?" Increasingly, in the innovation economy, fundraising from non-traditional sources is part of the job.

I open source pretty much everything we do. It's available free to anyone.

GOVERNANCE MATTERS

Governance is unbelievably important. If every time there's a new bright shiny object, people say "Squirrel!" and chase it, you'll wind up with a cloud-hosted blockchain with machine learning for APIs. There has to be a process where you bring stakeholders together, and say, "What should we do?" There are always a million things you could do, but what is the highest priority? What are our metrics for success? If we're going to fail, how do we fail fast? You've got limited time and resources.

MACHINE LEARNING APPLICATIONS

I have five Amazon employees in my organization, and we have 12 Amazon machine learning apps in production, and 36 in the pipeline...

Amazon is looking for the opportunities in healthcare. And unlike IBM Watson replacing doctors—not—Amazon is saying there's a bunch of prosaic stuff that goes on every day that could benefit from cloud-hosted utilities. What is the most common technology in a doctor's office today? A fax machine. If you were to have a surgery at Beth Israel Deaconess, how do we get your surgical consent? Your doctor faxes it to us.

We built a machine learning service to read faxes. Our faxes are read by Amazon's [machine learning service]. Amazon says, "Oh, this is a surgical consent. Let me insert it into his record as a digital document, and check the box that surgery can begin." [You can also apply machine learning to

questions like, which patient] is going to need the ICU, and who is going to be discharged when?

My chairman of radiology told me that when he was a fellow, he was reading MRIs that had 20 images. Today, they have 300 images. Can a mere human look at 300 pictures in a single case and be able to find the needle in the haystack? It's just hard. But what if you had a machine learning algorithm that said, "I've sifted through the 300, and here's 20 the human should look at?" He told me that that would bring the joy back to practicing for him.

ACCEPTING REASONABLE RISK

Maybe there's a point where you're an early adopter, and it's kind of risky. I think if you want to be an innovator, you have to have some tolerance of reasonable risk. If you wait until all the risk goes away, it's too late.

[When I tell people that] all my production systems run on Amazon Web Services, [they say,] "How could you do that?" My answer is, "How many employees does Amazon have paying attention to resiliency and security?" I have five. They have more.

WHAT'S THE CATALYST FOR INNOVATION?

You do need a catalyst [to make innovation happen in a large healthcare organization], whether it's a frustration or problem or economic urgency. I've certainly heard lots of pitches where what is being pitched is a solution in search of a problem.

You're trying to connect your FitBit to Twitter to create a social network for weight loss? That [is likely] innovation for innovation's sake. There's no urgency.

[In the past decade or so,] our urgency was driven by regulatory compliance: HIPAA, the Affordable Care Act, meaningful use. Those all happened simultaneously. ... Today, our urgency is about the business imperatives; it's not the federal government telling us what we should work on next. It's how do we survive changes in market conditions or reimbursement. ♦

Failing Fast and Taking Risks: How Adobe's Legal Group Met the Challenges of Supporting Innovation

BY DONNA KOLNES, ADOBE ASSOCIATE GENERAL COUNSEL



At our Silicon Valley Field Study in 2016, Mark Randall, Adobe's VP of Creativity, discussed a simple set of legal guidelines that had been created for employees who participate in Adobe's Kickbox ideation and prototyping process, which supports employees as they cultivate new products.

The guidelines "fit onto two sides of one page," Randall said. "It's 12 bullets. Anybody can read them, anybody can understand them. Legal says, 'Look, if you don't like these, [or] you have trouble with one of these, just call us.' There's only been a handful [of Kickbox participants] that needed to go to Legal for further help... People are able to self-gate, self-qualify, and self-manage to prevent disaster."

Since many companies deal with the need to create clear legal boundaries for innovators that don't totally stamp out any and all risk-taking, we asked Donna Kolnes, one of the members of Adobe's legal team to share some background on the thinking behind the guidelines.

...

The Adobe Kickbox program teaches innovation techniques that allow our employees to originate a new concept, and then publicly test out their theories using a fail-fast concept validation methodology. Innovation is very important to Adobe. Enabling rapid experimentation serves real business purposes as well as enhancing morale; it rekindles our employees' passion for creating software that our customers want. The benefit of having inspired and excited employees who are eager to innovate is priceless.

We were challenged to find a way to balance the legal risks of this type of development with the benefit of employee-driven innovation. It wouldn't scale to have Legal involved in this development process, and we didn't want to get in the way. We created a short, one-page set of Kickbox Legal Guidelines. So long as employees follow the guidelines, they do not need to consult Adobe Legal as they build out their project.

The Adobe Kickbox Legal Guidelines are for internal use only; we don't share them publicly, despite the fact that we have open sourced the Kickbox program. Having said that, we can share how we approached the risks related to the Kickbox development methodology when crafting the guidelines. One disclaimer: If you are applying the Kickbox development methodology, we strongly suggest you obtain your own legal counsel, as this article does not provide legal advice and is not a

substitute for proper due diligence. You will also need to determine for yourself what is a high risk, a medium risk, and a low risk for your particular business.

AVOID

Our approach was to identify risks that had severe consequences and then to have the employees avoid them altogether. We didn't want to dampen anyone's vision, but in order to scale the program, we thought it was important that the program not require legal intervention. However, since Adobe is a publicly-traded company, we thought this was an appropriate limitation. One example is that we asked employees to avoid developing products and services directed towards children or heavily-regulated industries such as the financial sector.

Since our primary customers are creative professionals and people who use enterprise analytics, we thought this was a minimal intrusion on our employees' innovation while addressing the issues that would bring the highest legal risk.

MANAGE

We thought that other high-risk legal issues could be managed by requiring certain behaviors. Rather than avoiding certain features and functionality, we limit the ways in which the experiment can per-

form specific, high-risk functions. For example, we require the use of social sign-in (like Facebook and Twitter) for products and service experiments to address privacy issues, so that we weren't storing user IDs or passwords. We also require the use of, and adherence to, a privacy policy and insist on certain disclaimers in the terms of use language, such as no warranty and a limitation on liability.

For medium-risk legal issues, we provide reminders such as honoring the IP of others and suggestions on how they might run certain tests in a manner that mitigates legal risk further. For example, providing a multi-screen purchase workflow that stops short of collecting credit cards is a way to test whether users would pay for the product or service, while avoiding the risk of actually collecting sensitive personal information. Lastly, we thought that a geographic limit (like North America only) and a short duration for each experiment provided the right balance to mitigate legal risk, while allowing for public tests of rapidly-developed innovative concepts.

We've now distributed over 1,000 red boxes—the starter kit for Kickbox participants—to our employees. Without the right legal framework, that scale of internal innovation likely would never have been possible. ♦



Donna Kolnes,
Adobe Associate
General Counsel

Fidelity Investments CEO on Blockchain, VR, and Deflation in Financial Services

BY KELSEY ALPAIO, ASSISTANT EDITOR



Sign outside the Fidelity Center for Applied Technology in Boston

When Fidelity Investments was founded in 1946, its main goal was to make it easier for individuals who weren't avid stock market followers to invest. Edward C. Johnson II, founder of Fidelity Management & Research, focused his efforts on mutual funds.

Mutual funds remain a large part of Fidelity's business today (its Fidelity Contrafund has accumulated about \$33.24 billion in assets and is considered by NASDAQ as one of the top mutual funds for annualized total return). And the privately-held company also remains focused on its original goal—to reimagine the way people invest.

At a 2018 FinTech Sandbox event in Boston, Fidelity CEO Abigail Johnson discussed the history of the company's innovation unit; some of the organization's most recent innovations; and its goals for the future. Edited highlights are below.

...

INNOVATIVE THINKING

We didn't get to where we are today without pushing ourselves and asking ourselves always, on an ongoing basis, what in the financial services arena can we reimagine? What can we do differently or better than it's being done today? That's been our tradition—to embody that thinking all the time...and continue to do what we already do better, but reach to do new things in a new and redefined way. ...

Back in the '90s, my father [Edward Johnson III] was CEO, and he felt strongly that there should be a cadre of people in the organization who were charged with researching technology and what was out there. ... Thinking about what's out there and then asking themselves, "Are any of these things applicable to our business?" That's how FCAT [the Fidelity Center for Applied Technology] got going. ...

We've had that tradition for a long time, and we've had people in the organization who have come out of other jobs, spent time in FCAT, gone back to other jobs, and people who have been in FCAT for years. It's a very collaborative organization. There have been goals to collaborate with people across Fidelity and not to be a complete island. ... It's expanded. We now have Fidelity Labs, which is separate but similar, and again embarked on

pushing the envelope with new ideas, more often around incubating new business ideas that embody or use new technology. ...

STUDENT LOANS

On student loans, our internal HR teams were charged with what we [could] do to make sure that we have a 21st century associate experience here in Fidelity, and how do we make sure that we're attracting and retaining the best talent that we can—particularly younger talent that might be expecting different things than what some of our more mature talent, age-wise, does.

The number one thing that came up was helping people to figure out how to address the burden of student debt. That led us to think about how do we build mechanisms to help people better manage their debt? ... We started talking to other companies and hearing that a lot of companies are thinking about how to do this. That morphed into building our student loan platform, which is now in the marketplace. ...

[Just within Fidelity, this platform has saved employees that have student loan debt \$22.5 million and 35,000 years of payment.]

THE GIG ECONOMY

With bSolo, [Fidelity's offering for self-employed workers,] that really came out of a combination of ideas. We do scenario planning with groups of our associates where we challenge people to think about the future.

[Several years ago,] one of the themes that came out of a series of scenario planning and exercises we did across the organization [regarded] contract workers. ... How are we going to serve the needs of those people? Because our traditional retirement business is built around serving people in a corporate environment. So we were asking ourselves, “How do we do the same thing for people who, because of their choices, are not part of a corporate environment? How do we build an offering that makes sense for them?”

ARTIFICIAL INTELLIGENCE

Like a lot of companies, [AI & machine learning] has been an area where we really accelerated our efforts tremendously. I work with the teams regularly to review use cases that we're working on for our AI efforts. I spend time with the team talking about how we build the infrastructure to house the right data environment...[and] having the right

tools to be able to do the real-time analytics that we need to do to achieve a level of personalization that we believe customers are going to be expecting in the future. ...

So we've begun rolling out a chatbot for our website to answer questions. Just the other day, I reviewed the team's work on how we're going to do a better job with the Fidelity.com search capability, so we can anticipate better what are the things [you are really] looking for when [you] type in common terms into our website search box? It's exciting. It's really about getting deep into our customers' heads and understanding what their real desires and needs are.

VIRTUAL REALITY & EMPATHY TRAINING

Our teams are going hard at [virtual reality] as well. We're working with Amazon Sumerian [a platform for building AR and VR apps,] and we've got a virtual financial advisor, her name is Cora... I've interacted with her a little bit, and she's quite helpful...

“I spend time with the team talking about how we build the infrastructure to house the right data environment...[and] having the right tools to be able to do the real-time analytics that we need to do to achieve a level of personalization that we believe customers are going to be expecting in the future.”

ABIGAIL JOHNSON, CEO, FIDELITY INVESTMENTS

The team has also done some really interesting work that people outside of the organization wouldn't see but is extremely valuable to developing a better experience for our customers... and that's a program around empathy training for our representatives. I had a chance to give the training a trial run, and it's really great. [You have the] chance to be presented with all different types of people at all different stages of their lives, facing all different kinds of situations, and have a simulated conversation, which is partially about how you help that person find a point-of-view for a technical solution, but equally as much about trying to understand them and...[make] them feel confident that you understand what they're going through and that the solutions and options that you're going to suggest are actually reflective and appropriate for their needs.

One of our core beliefs is that the financial services industry is not going to go 100 percent electronic. Over and over again, when we study our customers, we find that most people want to have a conversation on occasion with a real person about their financial situation, or at least know that they could. That's important to almost everybody. So we believe in the importance of making people available to talk to our customers.

BLOCKCHAIN & CRYPTOCURRENCY

A few years ago, myself and a few other senior executives here were just curious about what was going on with Bitcoin... We started getting together to talk about [it and understand it]. Even in the very beginning it was a complicated, abstract concept, and we [felt we] should get together amongst ourselves and talk and try to figure this out.

That led to having regular meetings and reaching out around the community to invite outsiders in to come talk to us about what they were doing. And that led to us launching a mining operation, which seemed like a dubious concept at the time—but the price was something around \$180 when we

started the mining operation. We never thought we'd make money, but we thought it would be a good idea because we'd get in at the ground level and learn something. It was helpful in having that as an operation to start to build a team, and [have] something to focus on... Lo and behold, the price goes up, and all of a sudden we're making money.

[We started by] building a very long list of use cases for Bitcoin, Ethereum, other cryptocurrencies, or potentially just raw blockchain technology. Most of them have been scrapped by now or at least put on the shelf, and the things that actually survived were not necessarily the things we expected.

But we were trying to listen to the marketplace and anticipate what would make sense. The first thing we got out into the marketplace was our donation capability through Fidelity Charitable, and that was a surprising hit. But it worked out, because there were so many people who were newly, incredibly wealthy though Bitcoin who were looking to become philanthropists, and we made it really easy for them...

Since then, we've [gone] back to our roots, thinking about what's really the foundation of this

Participants in an Innovation Leader Field Study experience a data visualization demo at Fidelity Labs in Boston.



business? We've got a few things underway, a few things that are partially done and partially on the shelves. We hope to have a few things to announce before the end of the year.

INDEX FUNDS AND DEFLATION IN FINANCIAL SERVICES

There's a lot of thinking going on here at Fidelity and at other companies around...index investing, and the reason people are focused on it is because that's the way to keep fees as low as possible. There's a big market for that right now.

So it's a trend that's going to continue. It's based on this larger macrotrend which is deflation in all of financial services... Generally that's really good for consumers.

The more great technology that is out there that enables us to be able to run things more efficiently, then we can continue to take costs down. Our philosophy, and there are others in the industry that share this philosophy [is that] the way to win in this industry is to provide more value to people all the time. The less you can charge for your services, the more value you'll be able to provide to people, and your business is going to do better.

That cycle is going to continue, and right now we're looking at doing more of our core processing in the cloud...to lower our overall costs...

PERSONALIZATION AND PROTECTION

[Data and security] is a huge issue for us. And it's kind of the flip side of AI and data analytics. People really like it when you personalize their experience. So like other institutions, we've been on a mission to do that for some time. However, it's raising issues that I think we didn't initially anticipate, but we are now very deep into being concerned about.

Our industry has more at stake than any other industry in looking out for people's identity... Right now in all business, it's helpful to try and gather as much data about people that you can. It's one thing to gather as much data about somebody around their shopping preferences or what kind of soap they like to buy, as opposed to data related to their financial life.

When you're talking about someone's financial life, there is a tremendous amount of personally-identifiable information that keeps your identity secure. And so the question is, how do you provide all of the online digital capabilities that the market

is going to expect, but in a really secure way? Our biggest concern of late has been...credential sharing—people who share credentials [associated with their financial accounts] with a third-party provider to try and take advantage of their services. At the time, they unwittingly were sharing huge amounts of information that they didn't realize they were sharing. People are starting to get tuned into this issue, especially with the advent of GDPR...and the California privacy regulations...

"When you're talking about someone's financial life, there is a tremendous amount of personally-identifiable information that keeps your identity secure. And the question is, how do you provide all of the online, digital capabilities that the market is going to expect, but in a really secure way?"

ABIGAIL JOHNSON, CEO, FIDELITY INVESTMENTS

We've been encouraging people to use soft tokens [a type of two-factor authentication]. If you really want your money to be secure, that's the best way to do it. It's not as convenient. We've rolled out second-factor authentication, which makes things a lot tighter. The downside is, it creates a little friction in the experience. So this is an area of intense focus for us.

CULTURE AND CLUBS

We're always looking for talent. One of the things we've discovered is [that] there are hidden talents in our community that we don't always know about. We've formed a series of clubs as a way to engage people in their aspirations and give them an opportunity to connect with other people who have the same aspirations... Our first club was the Bits & Blocks club [focused on blockchain], our second club was an AI/Machine learning club, and we have a whole slew of other clubs. It's an opportunity for associates to hear speakers and to engage in meetups in person or virtually around the areas of interest that they have. It's fun for associates, but it also gives us a way to know who is interested in what, so when opportunities come up, we can loop people in...

As part of those clubs, the clubs all have education agendas, so that it's a way for individuals to be

able to...learn about new things. Like most big companies, we have programs around getting certifications, programs around learning new capabilities, programs around bringing people in and having specific training around building skills.

It's a combination of us providing the actual tools and creating a culture that's a learning culture. That's something that is really important for us because our business grew like crazy through the '80s and '90s and we kept doing a lot more of the same, and that made us successful. Now, the rate of technology change is way faster than it was in those decades.

So the program for us now is [that when] you come to Fidelity, you have to expect change. We will give you the tools to create change for yourself and your development, but you have to want to do it, and you have to expect that we will be changing with the rate of change in the industry... It's a challenge but [also] an opportunity, because we're going at it in a holistic way, meaning around the specific capability as well as building a [supportive] culture...

IF IT'S NOT FUN, MAKE IT EASY

Inertia is profound in our industry. And because financial services is an industry that doesn't have

a high "fun factor," people tend to be anxious to engage in financial planning. We have to coax people to want to be engaged in financial planning. Try to make it easy for them—make it pleasant and generally palatable. When you say to most people, "Oh, why don't you spend your free time thinking about your retirement?" you get a big thud. It's not surprising that almost anything new [that we introduce] takes a while to transition...

Scale is critical. We focus a lot on building scale around our repeatable processes, and there's been tremendous deflation in financial services for over a decade now, and that pressure, I believe, will continue. So it's really important for all of the standard processes around opening an account, servicing an account, all the things that are not that exciting, to be really efficient...

The backbone of the financial services industry is still very much [running] on aged technology and it's very interconnected, so it's not that one company can just change it. It requires everybody to want to go down this path towards a more efficient financial infrastructure. ♦

How Royal Bank of Canada Moved Fast to Deploy Mobile Payments

BY ANN BROCKLEHURST, CONTRIBUTING WRITER



The headquarters of Royal Bank of Canada in Toronto.
Photo by Francisco Diez.

Staying ahead of a technological shift in your industry can be tough when you're not a tech leader like Google or Apple. Should you marshal the internal resources necessary to do cutting-edge development on your own, or simply wait for one of the tech giants to make their move, join them as a partner—and risk letting them come between you and your customers?

That was the situation facing Canada's largest bank, Royal Bank of Canada, three years ago. RBC didn't see itself as a competitor to the tech companies, as it became clear that consumers would soon expect to use their mobile phones to make payments, says Linda Mantia, Executive Vice President of Digital, Cards & Payments at the \$26 billion financial services institution. In fact, Mantia says, the Toronto-based bank "wanted to be everyone's best partner." But it also wanted to move quickly to understand the technology, how it could be deployed, and how consumers would respond to it.

"RBC knew for years knew how massive a transformation mobile was going to be to payments, so we weren't confused on how important it was to get it right," Mantia explained in a recent interview. The bank, she says, "understands payments right to their core" and has always done R&D in the area.

"We are trying to use all these amazing new technologies that are being developed to drive solutions for problems that clients have always had. We're just in a better position today than ever before to solve those problems."

PROJECT ORIGINS

Here's how RBC's digital wallet project got the go-ahead in the summer of 2012, a time when Canadians were just starting to use and love the super-convenient tap technology that allows them to make purchases under \$50 by simply tapping a credit or debit card at the point of sale, no signature or PIN required.

Mantia recalls her first meeting with head developers Edison Ortiz and Terry Lee. "I was relatively new in the role, and the team was taking me through it," she says. As they explored the various technological approaches available to them, including one that required customers to insert a special secure SIM card into their phones, "I just asked the usual questions people would ask like 'Why would a client use this? It feels like a lot of work.'"

"That's where we started. We said the minimum condition is using your phone has to be at least as easy as tapping a credit card, and the SIM [proposal] wasn't that. That's why I said, 'I don't get it. We're rushing to do something that's worse than what we

have today and we're going to spend a whole bunch of money. It doesn't make sense."

Mantia had been involved in early e-commerce before becoming a banker in 2003. "[I feel that] I can spot who understands technology well," she says.

Storing account information on a SIM card struck her as less digital, as opposed to more digital. The developers told her they believed there was indeed a better way to do things—relying on the cloud and sending secure data wirelessly—but it had been dismissed earlier on. "As I listened to the team I said, 'We have to give it a go, because this approach with the SIMs and the role of the telcos sounds fraught with risk. Let's at least make sure and convince ourselves there isn't a better way.' The first step was a small one—giving the team two weeks to come up with a solid proposal. After four days, Mantia got a thumbs-up text saying they could do it.

Because it was a high-priority project with a tight deadline, executives waived some of the bank's more pesky bureaucratic rules or "very, very strong governance," as Mantia puts it. "A lot of projects get mired down in that, but we said, 'Look until this goes into production—until it even comes close to touching the RBC servers—what really matters?'"

Normal procedure would have involved writing the business requirements, having compliance and the control functions weigh in, and then a technology team build it, RBC decided they were just going to give the team a month to build. "Then we'll bring all the right people in to ask the right questions and see that it's moving in the right direction," explains Mantia, "because they don't need us to write business requirements, and we don't need a bunch of people to pre-approve the architecture. We'll get it on the back end. So that was just an example of what was different."

She continues, "We have to be incredibly tight on the importance of security, the importance of the privacy of client data and our brand. We right away said, 'Thank you everyone else for your input. Right now these guys are going to just invent, and long before it hits our servers, everyone will have more than their opportunity to stress test it, to hack it, to ensure that we have the right quality of code.'"

Mantia also had the buy-in of David McKay—who took over as RBC's CEO last year and was then head of Canadian operations. "He has a real passion for payments and a lot of experience in payments," she says, adding that he saw the project as "a big deal and the beginning of something major and transformational."

For the actual building phase, it was decided that the mobile payments team should move to their own separate space, which they nicknamed the Shipyard.

The significance? They were planning to build something big. "All the relevant business, technology, and digital people were in the room," says Mantia. "It was great, because obviously they had a lot of energy. It was exciting. They were given a lot of autonomy to do something. It had all the guardrails around it. It was just a different way of putting those guardrails in."

LAUNCH AND REACTION

The first ship sailed in March 2013, a few months later than planned, when McKay showed off the new digital wallet technology at a Toronto McDonald's, buying some burgers and fries in the country's first mobile-phone debit card transaction. Then, in January 2014, the bank officially launched its RBC Wallet for clients, offering both debit and credit transactions.

The RBC wallet has been hailed in the business press. The Toronto Globe and Mail published a major article on the RBC wallet, noting:

The bank isn't Apple or Google, or a Silicon Valley upstart, yet it built a product that is far more advanced and nimble than many of those introduced so far by US tech leaders. It also managed to do this with a measly budget of \$10 million and all within the confines of a stodgy Canadian bank.

But consumer enthusiasm has been slower to build. In the comments section of that article, readers asked some of the same question Mantia and her team have been grappling with for years: Why would I want to pay with my phone instead of my card?

The answer is on the way, says Mantia, who notes that we are still in the early days of the payments revolution. The act of paying for something likely needs to be linked to special offer that brings a shopper into a business and a loyalty program that will try to bring them back—not to mention continuing to reduce the friction of pulling out a card to pay for things.

"Everything we did was to [make] all our inventions as flexible as possible, so when cars are able to pay for your gas themselves and pay the toll by themselves, we want to have the kind of infrastructure that could support that," Mantia says. "That's what we invested in." ♦

Update: Mantia is now COO at Toronto-based Manulife.



Linda Mantia, EVP
of Digital, Cards &
Payments, RBC

Open Innovation at AstraZeneca: What We've Learned So Far

BY SCOTT KIRSNER, EDITOR



Scott Wilkins,
Enterprise Innovation
Director at AstraZeneca

As part of our Innovation Leader Live series of conference calls, we spoke in 2016 with Scott Wilkins, Enterprise Innovation Director at the British pharmaceutical firm AstraZeneca and his colleague Rob Albert, the Collaboration Delivery and Exploitation Lead. While AstraZeneca is headquartered in London, Wilkins and Albert work in the company's Waltham, Massachusetts research and development site.

They talked about the history of the open innovation program at AstraZeneca; how they use recognition and financial rewards for people who help them with challenges; how they got legal and compliance leaders on their side; and how they're shifting the culture at AstraZeneca from feeling like every great breakthrough needs to come from an employee. In Wilkins' words, the company now stresses that "the patient doesn't care who solves the problem"—just that there is a new drug available to treat their disease.

Worth a look is the AstraZeneca website for open innovation challenges that anyone in the world can respond to, at openinnovation.astrazeneca.com.

HOW OPEN INNOVATION GOT STARTED AT ASTRAZENECA

Scott Wilkins: It really started back in 2010. We were looking to build our pipeline up, to replenish the [products on the market] that were coming off patents.

There was a gap there, and we needed a step change in the way we did R&D. New leadership was brought in, and one of the top things that I heard from the leaders was that we're not working together enough in R&D. The therapeutic areas aren't working together, and there are too many silos. We have 10,000 people in R&D, a large R&D budget. How can we do things differently?

One of the things that I saw was around crowdsourcing. You [could] get someone in the cardiovascular therapeutic area that's a chemist, and someone in oncology, and they can help each out with their problems and their challenges. The issues are that they're in different therapeutic areas, so they're not necessarily in the same circle. They might be spread out geographically, too. One could be in Sweden, the other could be in the UK or the US. How do we get these people together? We piloted some tools, and we decided to go with one called iSolve. That was



our internally-branded internal collaboration tool [built in partnership with InnoCentive, a crowd-sourcing platform]. That was around connecting the 10,000 people that we had globally.

Oncology was interested in getting some of their problems out to the different therapeutic areas. When we did the pilot with oncology, and so it was really oncology problems that we put out there. ... We would send them out to pretty much everyone in R&D. We probably had 8,000 people out of the 10,000 people that were connected to the iSolve platform. Oncology problems were the first ones.

We started with internal innovation and then we thought, "How do we do open innovation [externally]?" We built up confidence, ran a bunch of events, solved some significant R&D problems internally, and then I think that really set the stage for us to [create] an open innovation business case that was supported by the R&D leadership team.

That launched in 2014, and has been going well. The team actually won a CEO award. It's a company of 60,000 people, and there's a handful of these awards to go out each year, and the open innova-

tion team was one of them.

An AstraZeneca scientist at work in the lab.

SOURCING PROBLEMS TO WORK ON

We had support of the R&D leadership team, and so we had representatives for each of the [therapeutic] areas, and they would go out [and] would look for challenge owners.

[Challenge owners] are people with problems that would raise their hand and say, "I need some help," and they would post it out. The reward for them is, they get their problem solved. They would be able to make a decision from there, to either advance [a project or] to stop a project, because you have new information that the project's probably not going to make it into a drug, or make it to the next phase.

We launched iSolve, and the internal platform in 2012. It was in 2014 that we launched the open innovation site. It was in development for about a year... We wanted to be careful, and do it the right way. It's getting the right problems out there, the ones that we can't solve internally. The other thing

is around IP transfer and legal implications [and] compliance.

There's just a lot of groups we had to work with, and I guess my advice is involve these folks early, and really try to partner with them, and have a balanced, risk-versus-reward discussion. I think that helped us move the conversation forward, rather than just focusing on risk, around the risk of potentially IP issues.

You can have that conversation, but also balance that with the benefits. The benefits are that we've got 10,000 scientists, and we've got hundreds of companies, and academic institutions, and government institutions that we partner with. But there's several billion people in the world, and those answers to our problems could be beyond our current scope right now, with the partners that we have and the folks in our R&D facility.

GETTING THE RIGHT PEOPLE BEHIND IT

We had examples of where other companies were doing [open innovation externally]. I think the key here was that we had the top scientific leadership on board with this, including the heads of R&D. In our process, it's the person in charge of a therapeutic area that reports into either the head of research or the head of development. They're the ones who sign off on any challenge that goes outside.

The next thing, after we got scientific leadership and senior scientists on board, was getting legal on board. Scientists know a lot about the IP, and they know what risks are there, so it was about explaining to legal that, "okay, we have the head of the therapeutic area and the senior scientists who are comfortable with putting this problem out there."

It's having that discussion, then if something came up with compliance, we would have our colleagues in legal talk to the people in compliance on why this should go forward, and what the benefits are to the company. It's kind of getting your ducks in a row, so to speak, which is helpful for us.

Rob Albert: Really, the only other guys who were opening the door at that time [was Eli] Lilly. If you look back, actually, the founder of InnoCentive came from Lilly, and he's back at Lilly now. But we, AstraZeneca and Lilly, are really the pioneers in opening up this kind of innovation and open collaboration.

SUCCESS STORIES

One of the examples that Scott and I generally like to share is that we were asked a question from the manufacturing group in the UK. They were trying

to manufacture a clinical [drug] candidate, and they needed some help. They weren't getting any traction through the normal means, so we posted the challenge on iSolve, and one of the scientists from our Waltham [Massachusetts] area actually logged on and said, "I actually did this kind of work as a grad student. This is what you need to do. You can take out these two steps, you can eliminate this expensive catalyst. By the way, you're going to cut down on multiple gallons of severely toxic waste." That had the potential to save millions of dollars.

"There's just a lot of groups we had to work with, and I guess my advice is involve these folks early, and really try to partner with them, and have a balanced, risk-versus-reward discussion. "

SCOTT WILKINS, ENTERPRISE INNOVATION DIRECTOR, ASTRAZENECA

It was a huge success. He was actually recognized at the end of the year, at dinner, from what we call iMed, which is our innovative medicines group. That kind of success breeds success.

[Another] of the things that I like to talk about is the clinical compounding. ... We have compounds [that] went [into clinical trials], and failed for one reason or another. Now, it could be failed for efficacy for their intended target, it could be they failed for safety margins.

What we've decided to do, which is a complete about-face for pharma, is instead of just allowing those compounds to sit on a shelf and serve no purpose, we said [to outside parties], "Come take our compounds, repurpose them, and tell us what you want to use them for." Out of that are going to be delivered two new medical entities for cancer treatment, which is awesome, because that's two compounds that were literally put on the shelf, and now they're going to be delivered to change people's lives. It's really, really cool stuff.

Some people suggest that open innovation and crowdsourcing tools are really only useful for incremental problems and solutions, and not for breakthrough or disruptive ideas. One of the paradigms that we're trying to challenge is the view that this can only be helpful in certain situations. My own take on that is, that can be true if you don't have an overarching program with an overarching goal.

We're not just paying lip service to open innovation. We're actively promoting our open innovation. We are partnering with people like the Medical Research Council in Cambridge in England, and we're partnering with tons and tons of [other] academic

institutions. We're partnering with other pharma and other biopharma [companies], so there's a lot of collaboration that's coming directly out of this open innovation platform.

I'm sure that you are all facing budget constraints, and budget cuts, and travel restrictions, and [the need to] do more with less. Open innovation is one way to do more with less. This is one way to take advantage of expertise and best practices sharing that we all have in our own companies.

BEST INCENTIVES

With internal innovation, we tried [financial rewards] in the beginning. It just was that the recognition, when [we followed] up with the challenge winners, they said that the recognition was more important. If you look at a TED Talk, Dan Pink has a nice video on [how], at the poverty level, money is an incentive, but when people are getting paid, it's not going to do much.

We have year-end iMed, or integrated medicine, awards. We have year-end CEO awards, we have year-end CIO awards. What we did this past year is, we were encouraged to submit a video explaining why you deserve to be considered for the CEO award. I'll use the innovation team. Out of a hundred main entrants, we were in the top three. That, to me, was really awesome. We got a plaque, and we had dinner, and we got recognized at the CEO awards, which was broadcast via webcast.

Our video was shown. It was a 90-second video, and it talked about the cool things that we do. We saw an uptick in that, and interest in our website, and people coming to us. Like anything, recognition and communication go hand-in-hand, and at the end of the day, we're a company of scientists... We like to solve problems, for solving problems' sake. We're not motivated by money. We're motivated by recognition by peers.

With external challenges, what InnoCentive [our partner for those challenges] has seen through

their postings is that if you post a challenge, and you don't post an award that's appropriate for the type of challenge that you're posting, you're going to get garbage responses. What it shows is that we're putting skin in the game. We are going to reward you for well thought-out answers to our challenges. That makes a big difference to external parties, because the top solver at InnoCentive pretty much does this as his full-time job. He solves lots of challenges on the InnoCentive website, because he's just a brilliant thinker.

POTENTIAL PITFALLS

You have to get legal and compliance to be your friends, first. You have to make them understand why you're doing [open innovation], you have to show the clear cost benefit, and then I would take that one step further. You have to show the reason why, if you don't do this, what the drawback is going to be. I would seriously consider why not doing it will be a failure. For the pharma industry, not doing it would lead to your competitors doing it and having an edge over you. That's just an oversimplification, but that's one argument in favor of doing it.

Scott Wilkins: In the past, people may have looked at putting a problem out there as a weakness, right? If I put my problem out there, [my competitors are] going to know that I don't have the answer. What we talk about [now is that] the patient doesn't care who solves the problem. The business and the shareholders don't care who solves the problem, so you're not responsible for solving the problem. You're accountable for solving the problem. I've seen a lot of lights go off with scientists when they say that, and it's almost like they're able to let go of any fear that they had once they get that. ♦



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