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DECEMBER 2023

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You Can't Manage What You Can't Measure

Value Drivers for Financial Planning

SMALL BUSINESS VS. IP TROLLS

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STRATEGIC FINANCE

Meeting the Future with Confidence

Prepared for whatever 2024 has in store, IMA is committed to enabling business growth and fostering knowledge sharing.

By Richard T. Brady, CMA, CGFM, CDFM

Year-end provides a unique opportunity to reflect on where we were, where we are, and where we're going. Reviewing achievements, challenges, and lessons learned empowers us to refine strategies and set new goals. It's a pivotal juncture to celebrate successes, recalibrate priorities, and envision aspirations for the upcoming year. Ultimately, these reflections can become a catalyst for growth, not only for IMA® (Institute of Management Accountants) but also for the broader accounting and finance profession.

The year 2023 witnessed a blend of promising economic growth and persistent challenges across the global financial landscape. In the wake of the COVID-19 pandemic's lingering effects, economies showed signs of recovery but faced hurdles like inflationary pressures, talent shortages, and geopolitical tensions. Businesses continued to accelerate digital and financial transformation, adapting swiftly to hybrid work and customer needs. There was a surge in

AI integration, sustainability initiatives, and blockchain advancements. Supply chain disruptions persisted, leading organizations to prioritize resilience and accounting and finance professionals to embrace enterprise risk management.

IMA also displayed agility and resilience in the face of a changing accounting and finance profession. We said farewell to Jeff Thompson, who served for nearly 15 years as IMA's president and CEO. During Jeff's tenure, IMA truly became a global accounting and finance professional association, growing to nearly 140,000 members in 150 countries and recognized as one of the largest and most respected associations focused on advancing management accounting in business. This past spring, we welcomed our new president and CEO, Mike DePrisco, who brings nearly 30 years of expertise in association management and education to IMA. In his first six months, Mike and the IMA staff have conducted a complete strategic review, focusing on IMA's winning aspiration to serve the broader business professional community in the future.

As we look to 2024, a number of anticipated drivers and events may significantly shape the accounting and finance landscape, emphasizing the importance of adaptability and strategic planning for businesses and financial professionals. The economic recovery from the COVID-19 pandemic is likely to remain a significant driver, requiring governments and central banks worldwide to maintain a delicate balance between stimulating growth and managing inflation. Fintech innovations, particularly in areas such as digital banking, cryptocurrencies, blockchain applications, and AI-driven solutions, will likely reshape the financial services landscape. Coming off the successful 2023 United Nations Climate Change Conference (COP28), the focus on sustainable business management practices also will likely intensify. Strengthening environment, social, and governance (ESG) frameworks, reporting transparency, and integrating sustainable practices into business strategies will remain a critical trend. Finally, potential regulatory mandates and changes to accounting standards will lead to discussions and implementations regarding lease accounting, revenue recognition, financial instruments, and Generally Accepted Auditing Standards (GAAS).

Regardless of what 2024 brings, IMA remains pivotal to shaping the accounting and finance landscape and enabling business growth. It will continue to provide cutting-edge resources, professional development, and certifications, empowering professionals to navigate evolving geopolitical, regulatory, and competitive environments. As a global advocate for ethical practices and innovation, IMA fosters a community that thrives on knowledge sharing and collaboration, ensuring its members are equipped with the skills and insights crucial to excel in an ever-changing profession for years to come.

Richard T. Brady, CMA, CGFM, CDFM, is the CEO of the American Society of Military Comptrollers (ASMC) and Chair of the IMA Global Board of Directors. He's a member of IMA's Nation's Capital Chapter. You can reach Rich at rich.brady@imanet.org or via LinkedIn.

Welcome, New CMAs: October 2023

708 IMA members became CMAs between October 1 and October 31, 2023.

By Ella Suponitskiy, CMA, CPA, CAE

For more information on CMA certification, visit www.imanet.org/cma-certification.

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SF STRATEGIC FINANCE

Lessons to Cultivate a Data-Driven Culture

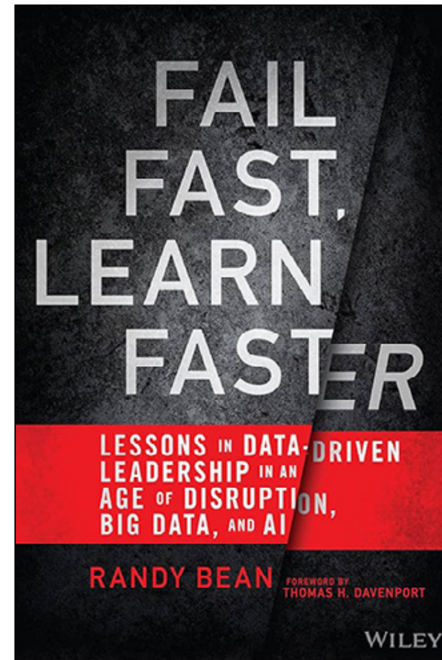
Through experimentation, data analytics, and learning from failure, organizations' finance leaders can overcome disruption.

By Chris Mishler, CMA, CIA, CISA

Randy Bean's primer on data-driven leadership, *Fail Fast, Learn Faster: Lessons in Data-Driven Leadership in an Age of Disruption, Big Data, and AI*, provides several benefits to accountants and data analysts who read it. Ongoing changes to data management processes and culture increase organizations' need for adoption of disruptive technologies such as data analytics and AI to remain competitive. These technologies are growing in the rate of their evolution and impact on companies of all sizes. These changes enhance organizations' need for robust data governance and an emphasis on ethics.

Bean provides a rundown of both cautionary tales and positive case studies of both large and small to midsized companies managing and analyzing data more effectively. The author offers lists with recommended steps, elements of developing a strong data-driven strategy, and the "10 Commandments of Data-driven Transformation" (the title of Chapter 10).

Take one of Bean's key success factors: developing a data culture. He writes that professionals need a purposeful mindset and a way of managing data that permeates all organizational levels. Tone at the top is necessary but not sufficient. The bad news is that there are no shortcuts to creating and implementing a data culture and outlining a corresponding road map. That said, it's well worth the necessary time and effort.



What business leaders need to become data-driven isn't a one-off project but rather a new, integrated approach to parsing decision-useful information, hence the term "data culture." The entire staff must grow to appreciate the value of data assets to buy into the effort necessary to customize the four key strategic planning areas Bean lays out: data strategy, data governance, data management, and change management and adoption.

Bean's advice for aspiring data-driven leaders to enhance their organization's success is simple: Start with low-hanging fruit—log quick wins to develop trust in the outputs of data analysis and provide support for the executives leading the process of organizational transformation.

Readers will appreciate the disciplined and thorough approach Bean brings to his insightful, futuristic, high-level guidance. The examples present data management models for teams to emulate and talking points to persuade the organization's leaders to set off on this data-driven road together. I recommend this book to students and professionals looking for a reliable guide to help their organization undergo a mindful and meaningful metamorphosis into a data-driven culture.

Chris Mishler, CMA, CIA, CISA, is a consultant at Eliassen Group and former chair of IMA's Technology Solutions and Practices Committee. You can reach him at clmish@gmail.com.

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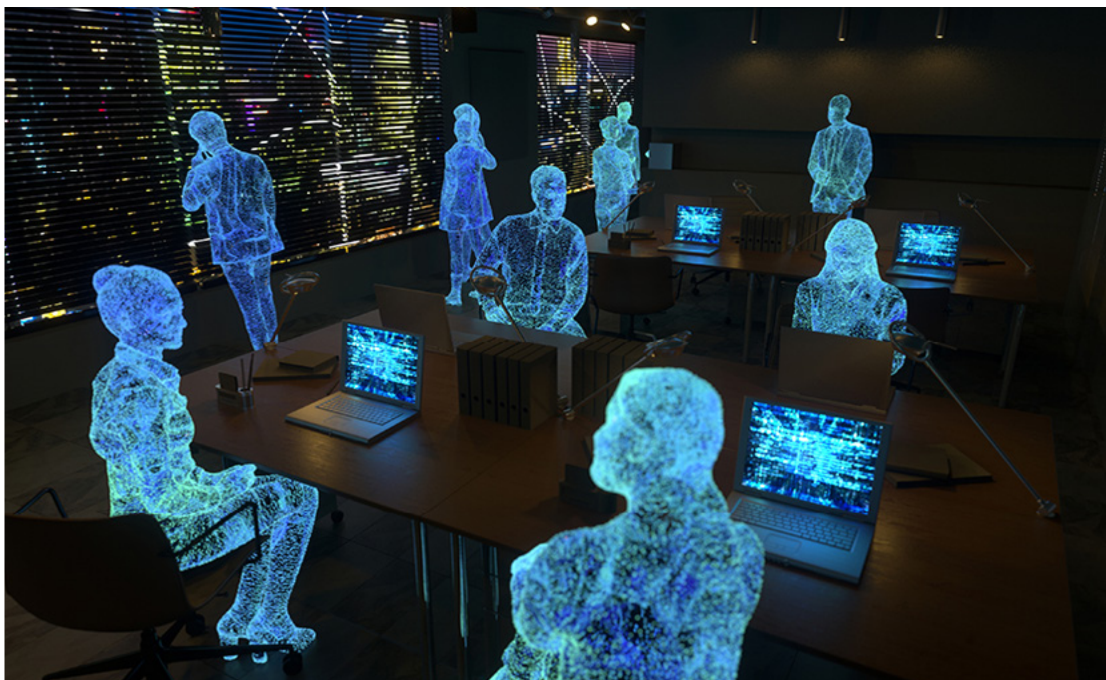

Using the Enterprise Metaverse to Support DEI&B

The enterprise metaverse can assist and improve the workplace for employees with diverse physical, cultural, and neurological needs.

By Zhuoyi Zhao, Ph.D., CMA

Flexible work models have evolved to be part of the new normal post-COVID-19. A survey by Scoop Technologies of 4,500 companies revealed that about 58% of companies allow employees to work at least one day from home. Among those companies, half have fully remote policies and only 4% require employees to work on-site four days a week. Moreover, according to Gallup, as of February 2023, 33% of employees with remote-capable jobs desire to work exclusively remotely, 60% prefer a hybrid arrangement, and only 7% prefer to work on-site.

Remote work experience largely depends on the digital tools and platforms being used. Among emerging technologies, the enterprise metaverse (EM) has great potential to reshape flexible work models to support employees' diverse physical, cultural, and neurological needs in a distributed and dynamic fashion. It can facilitate companies' diversity, equity, inclusion, and belonging (DEI&B) missions while enhancing employee collaboration, communication, and productivity in transformational ways.

What Is the EM?

The EM is a type of metaverse—the 3D virtual space that allows people to have lifelike experiences online using avatars. Although the EM typically includes digital replicas of business facilities in the physical world, such as office space, creative additions for employees' well-being, such as museums, beaches, parks, or even the moon, can also be built into the EM.

To join the EM, employees typically start by creating a personalized avatar. They then can navigate virtual spaces and interact with colleagues like they would in the physical world. An augmented reality (AR) or virtual reality (VR) device isn't always necessary to access the EM (see Microsoft Mesh, for example), but using such devices can make the experience more immersive.

Over the first half of 2022, the word "metaverse" appeared in U.S. Securities & Exchange Commission filings more than 1,100 times, compared with 260 times during all of 2021 and merely several times from 2000 to 2020. In 2022, 150,000 employees at Accenture had their orientation in the EM. And in 2023, 60 *Fortune* 100 companies are actively developing a metaverse strategy.

Flexible Work Models: A Double-Edged Sword

Being able to work from home is a relief to many underrepresented employees, because working on-site can cause a variety of physical, cultural, and neurological challenges. For example, commuting to work could be especially inconvenient for people with disabilities. Those who have heavy unpaid domestic work and care responsibilities—such as childcare, household maintenance, or looking after a family member with chronic conditions—may struggle to balance multiple fixed schedules. For some, there often isn't a private space at work to engage in mandatory religious practices. Others with food allergies or high sensitivity to air quality, lighting, sound, temperature, or moving objects could find it stressful to work in an open-concept, neurotypical office space. Flexible work models can offer an alternative to help reduce these stressful situations, which is critical to employee retention. McKinsey & Company reported that underrepresented employees are more likely to not only prefer flexible work models, but also resign when that preference isn't supported.

Although flexible work models can facilitate their DEI&B efforts, many companies are concerned that being remote may impair employee collaboration, communication, and productivity. Even for companies that implement remote-first models, remote employees are found to be difficult to manage and sometimes considered an operational risk. Since the EM is instant, immersive, and fully digital, it could help companies achieve both their DEI&B goals and sustainable financial growth.

Supporting Physical Needs and Enhancing Collaboration

Getting to work in the EM can be as easy as logging onto one's computer. This removes some physical logistic constraints for everyone, but it's particularly beneficial for those who either have physical disabilities or have tight schedules for domestic responsibilities. In fact, there were significant increases (as much as 251%) in the number of women attendees of some professional conferences when they were held online during COVID-19. The EM has the ability to make such professional development opportunities more equitable and can provide employees with nearly an in-person experience because it's immersive.

Companies often organize team-building events to enhance collaboration, yet employees with physical disabilities may find it difficult to fully participate and enjoy the more physical activities of those events. When those activities are hosted within the EM, they can be more inclusive. AR/VR technologies have already made sports more accessible.

Supporting Cultural Needs and Improving Communication

Employees' identities will become more diverse in the metaverse than in the physical world.

Meta, for example, offers more than one quintillion different combinations of avatar attributes. In the commercial metaverse space, many real-world apparel companies are selling digital outfits, some of which are impossible to produce in the physical world because they have digital effects. Since employees interact with each other using personalized avatars in the EM, they can explore more layers in their cultural identities and optimize their expression in the community. Ultimately, the workforce can evolve to be more diverse.

Employees with different cultural backgrounds have different needs in their workspace. Building, repurposing, or decorating spaces in the EM will likely be more cost-effective and creative than in the real world. Companies can easily support employees' cultural needs by, for example, building a virtual prayer or event room with a particular cultural theme. For minority employees, being able to connect with in-group colleagues during culturally meaningful times can mitigate the stress from social exclusion and promote a sense of belonging, which will translate into job satisfaction and retention.

The EM can also enhance out-group communications, especially when language presents a major barrier. For those whose work language isn't their mother tongue, communicating within the EM will be easier than on Zoom, since they can see more body language from a half- or full-body avatar than a headshot. Further, with the help of AI-based language tools currently under development, words from avatars can be translated instantly. Imagine a workplace where colleagues who don't speak the same language can still have meaningful conversations and develop professional relationships.

Supporting Neurological Needs and Motivating Productivity

Neurodivergent employees—such as those who have autism spectrum disorder (ASD), dyslexia, attention-deficit/hyperactivity disorder (ADHD), or social anxiety disorder—may excel at tasks that bring companies competitive advantages, such as visual memory, pattern identification, problem solving, and outside-the-box thinking. However, these employees are often underemployed because they struggle to be productive in a traditional neurotypical work environment. Companies that ignore neurodiversity are missing out on a large talent pool. According to the Centers for Disease Control and Prevention, about 2.7% children are diagnosed with ASD and 9.8% with ADHD.

Flexible work models can help neurodivergent employees maintain a comfortable work schedule and a less stressful work environment. The EM can further improve their work experience by developing neurologically fit work styles for them. Haptic devices for viewing and feeling digital items in the EM typically collect users' biometric data, such as eye movement, blood pressure, heart rate, and brain wave. Biometric data can indicate individuals' stress and anxiety levels. Real-time processing of such data will enable AI algorithms to suggest making neurologically fit adjustments to one's ongoing work style. For instance, when a fast heart rate or high blood pressure is detected, the device can prompt an employee to take self-care practices (e.g., take a break). On a connected network (e.g., the Internet of Things), lighting can be adjusted automatically at the same time to help employees calm down. Moreover, analysis of historical biometric data can help both management and an employee understand the latter's productivity and growth patterns. In the long run, that will help employees improve their well-being and optimize their productivity.

The EM can be more than a replica of the workplace we see in the physical world today: It can transform what we think of work while offering unique opportunities to redesign and improve work for everyone.

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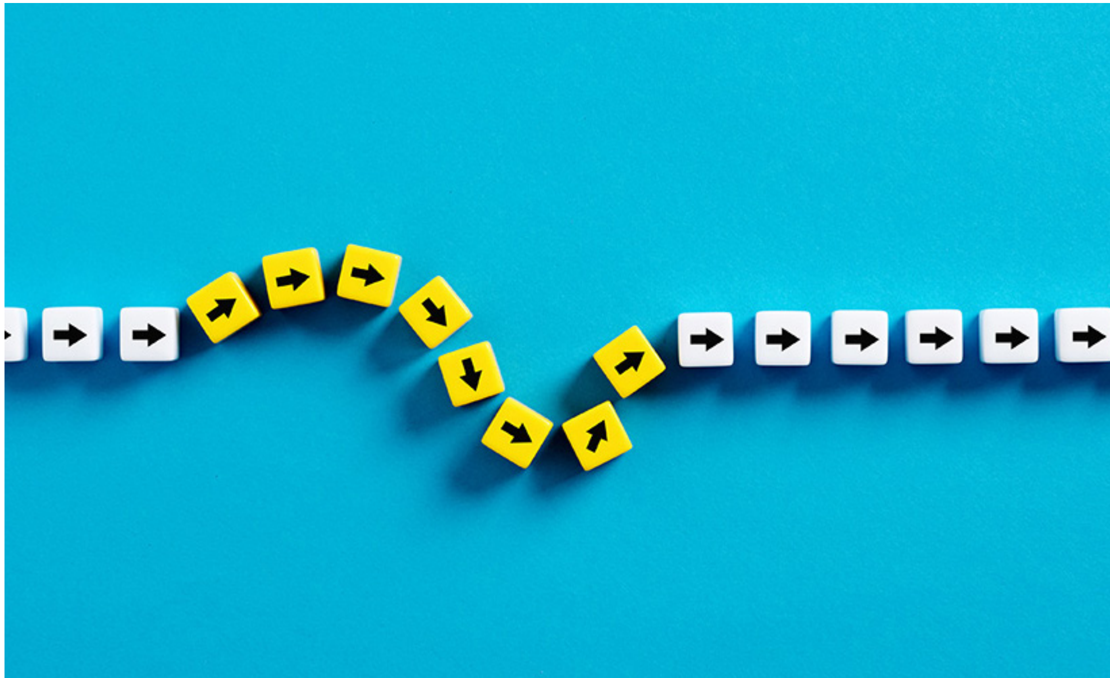
STRATEGIC FINANCE



Cultivating Resilience in Adversity

Despite budgetary and labor challenges, small businesses are finding paths to resilience through innovation and automation.

By Wassia Kamon, CMA, CPA

Small businesses facing constrained budgets are displaying a remarkable ability to adapt and thrive. Economic pressures and labor shortages are real, and so is small business resilience when it comes to facing such forces.

As Jordan Crenshaw, vice president of the U.S. Chamber of Commerce Technology Engagement Center, remarked, "Despite historic inflation and two quarters of negative economic growth, small business owners have proven themselves resilient time and time again, aided in part by technology platforms like digital advertising, business software, and delivery apps that power operational efficiencies and provide increased access to customers." As more small businesses turn to technology, practical strategies to help navigate this evolving landscape are key.

The Rise of Technological Adoption

The COVID-19 pandemic accelerated the adoption of new technologies by small businesses.

From online ordering to seamless delivery, businesses had to identify ways to be competitive both online and offline in order to attract and retain customers while tackling rising labor costs, global supply chain disruptions, and worldwide economic uncertainty.

Businesses that were able to adjust and survive are now expanding their use of technology throughout their operations post-pandemic. A 2022 survey revealed that "74% of businesses who don't already have a mobile app plan to build one in the next couple of years."

Weighing the Pros and Cons

Through technology, small businesses are able to achieve higher productivity in less time. These businesses are able to grow without linearly increasing their workforce. Additionally, with intelligent business applications and software, they're able to tap into key financial and operational metrics, as well as supply chain analytics, to make data-driven decisions for their business transactions.

As the Association for Advancing Automation pointed out, automation helps both large and small companies reduce the risk of workers doing repetitive and dangerous tasks while optimizing their operations amidst production labor shortages. For example, Chipotle partnered with a technology company to create a machine that can peel, core, and slice avocados. Employees can load up 25 pounds of ripe avocado, and the machine does all the work with significantly more efficiency and limited monitoring. This machine drastically reduces the amount of time it takes to prep meals while lowering the risk of injury and staff turnover. This provides a preview of existing technology and a glimpse into what's coming on the horizon. As larger companies invest in new automation tools, such tools will eventually become accessible to smaller businesses, allowing them to also retain talent, be more efficient in their operations, and improve their bottom line.

Most small businesses are excited about such possibilities and look forward to incorporating them into their operations. The U.S. Chamber of Commerce released a study on the digital side, revealing that 69% of small business owners said automation and technology allowed them to cope better with supply chain challenges and other hurdles.

But what are the risks? The main concern for many business owners is losing the human touch, the personal customer interactions often expected from smaller organizations. Is it possible that the actual and perceived level of customer care being provided may deteriorate with the adoption of too much automation?

Another concern is making the right investment in both technology and the personnel who will be using it, so that the efforts are worthwhile. Indeed, initial financing, ongoing maintenance, and reskilling or upskilling existing employees effectively are all crucial to ensuring success when it comes to new technologies. This is where implementing the appropriate strategy becomes essential.

Challenges in the Labor-Technology Transition

Given the constraints of limited resources, a prudent approach involves commencing with free trials or more cost-effective iterations of technological tools before venturing into more substantial investments. It's also advisable to access ancillary features such as accessible IT support and online instructional materials as complementary facets that can enhance workforce capabilities without imposing the challenges of a steep learning curve.

Furthermore, existing employees may experience feelings of exclusion, redundancy, frustration, and hesitancy when confronted with new technological implementations. Therefore, it's imperative to introduce changes at a suitable pace, ensuring employees' inclusion in the transformative process. Actively address their apprehensions and explore available resources such as online courses, local workshops, or community college programs to assist in skill development and adaptation.

To mitigate the risk of over-automation, small business owners should first make a decision plan on which aspects of operations would remain staffed. For example, they may prefer using

technology predominately for back-office processes while retaining staff for customer-facing positions.

Another way to approach this is by having manual processes and appropriate employee training for possible system issues, as well as developed disaster recovery plans. Having backup manual processes in place for essential tasks is paramount to avoid potential business interruptions.

Maintaining an element of the human touch is important for both customers and employees. As such, making an effort to preserve company culture and camaraderie in an automated environment should be top of mind rather than an afterthought.

In the world of constrained budgets and labor markets, small businesses worldwide are demonstrating their resilience by innovating, adopting, and automating their operations. Such tools are no longer solely for well-funded *Fortune* companies. Through the planned selection and expert deployment of technologies, businesses can enhance their operational efficiencies, thereby preserving their capacity for sustained growth and continued success.

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STRATEGIC FINANCE

Green Incentives and Environmental Performance

Strategic control and social conformity drive the decision and the length of time it takes to adopt green incentives.

By Giovanni-Battista Derchi, Ph.D.; Antonio Davila, Ph.D.; and Daniel Oyon, Ph.D.

Assigning monetary incentives to employees can be a powerful way for companies to promote greater performance in line with strategic goals. As environmental issues continue to become more prevalent, a growing number of companies have implemented green monetary incentives for managers and employees by introducing environmental measures in their compensation contracts.

There's much debate on how organizations should implement green incentives. In the last decade, for example, we have observed a rush to tie executive compensation to various environmental, social, and governance (ESG) objectives, including environmental goals. While some companies started to use green incentives more than 10 years ago, the vast majority have introduced them more recently. Moreover, some companies distribute green incentives to all employees, while others restrict them only to specific managerial positions. Yet do all these

companies need to introduce explicit monetary incentives for environmental goals within the organization? Are all companies capable of designing effective incentive systems that promote real performance improvement?

Conformity or Strategic Control?

Green incentives can be used for multiple reasons. From a strategic control standpoint, organizations following environmental objectives provide monetary incentives to align employees' goals with the green strategic goals of the company. In this way, green incentives are part of the strategy implementation process to motivate and focus employees' actions on achieving explicit environmental goals, like reducing carbon dioxide (CO_2) emissions and waste and water consumption. However, one of the most common challenges of introducing new incentive systems is the lack of accurate performance measurement. In fact, organizations are still learning how to measure environmental performance and have limited experience in identifying and designing measures to assess the environmental impact of their activities. Implementing a measurement and reporting process specific to environmental aspects might be a condition for the subsequent use of green incentives for strategic control.

Companies may also adopt green monetary incentives because they're caught up in the rush to conform to outside stakeholders' expectations. Some provide incentives just to symbolically conform to external pressures, perhaps leading to more pay rather than better environmental performance. Other organizations attempt to design incentive systems to produce substantial improvement; however, the difficulty and lack of experience in incorporating green aspects into management practices may prevent real performance enhancement.

Compared to other nonfinancial performance measures, such as customer satisfaction, quality, and safety, there are multiple conditions that make it difficult to implement environmental metrics in incentive systems. We identify three specific factors that affect the use of environmental performance measures in contracting:

1. Because green incentives are a recent phenomenon, organizations are still learning about the accuracy, congruency, controllability, level of precision in reflecting managers' actions, and behavioral implications of environmental measures.

2. Most traditional nonfinancial performance measures focus on internal processes, while environmental measures focus mainly on aspects outside the boundaries of the organization, like CO_2 emissions based on the Greenhouse Gas (GHG) Protocol.

3. The use of nonfinancial performance measures is linked to the fact that they are leading indicators of future financial performance. Yet companies use environmental measures also because of regulation or because of a corporate social responsibility mandate.

Using Green Incentives

We examined the conditions for companies to use monetary incentives linked to a series of environmental goals, such as reductions of CO_2 emissions, improvement of energy efficiency, a circular economy, implementation of climate change risk mitigation plans, development of new processes or products, and changes in employees' behavior for the benefit of the environment (see "Green Incentives for Environmental Goals," *Management Accounting Research*, June 2023).

To study the use of green incentives for strategic control, we analyzed whether a company's formal green strategy and use of ad hoc management control systems for implementing green objectives preceded the adoption of green incentives. We also examined whether these managerial reasons linked to improved strategic control explain the provision of green incentives to different managerial positions ranging from top managers, midlevel managers, and other employees, as well as how they affect the time to adopt these control systems.

We also looked at whether and when companies use green incentives as a response to specific conformity pressures: namely, the need to enhance their environmental performance in line with the industry and to mimic the behavior of industry peers.

In doing this, we discovered interesting aspects of companies' use of green incentives. First, green incentives aren't a direct consequence of a company's formal green strategy implementation, which suggests that having a green strategy isn't the only path to using green incentives. More importantly, we found that both strategic control and conformity pressures are important factors explaining a company's decision to use green incentives as well as their time to adoption.

In fact, a high level of experience in measuring, reporting, and auditing environmental performance appears to be a precondition for adopting organizational green incentives to reinforce the implementation of environmental goals. In other words, it's important for companies to accumulate experience in managing and monitoring environmental performance before being able to identify relevant green objectives, set appropriate goals, and select performance measures reflecting these objectives with enough accuracy. Interestingly, monitoring experience is a relevant precondition to using green incentives for top managers and other employees, but not for midlevel managers.

Conformity pressures are also powerful conditions that explain the use of green incentives. For example, when their environmental performance is significantly lower than the industry level, companies are more likely to adopt green incentives, perhaps to promote improvements or signal their commitment to the market. Moreover, as green incentives spread across an industry, a company's adoption decision is increasingly driven by social conformity, but only after a critical mass is reached, estimated at around 40% in our setting. However, the pressure to conform and mimic peers' behavior is relevant only to top managers and doesn't apply to midlevel managers and other employees.

We also examined the combined role of these conditions and discovered that the effect of strategic control in part outweighs the effect of conformity pressure for higher environmental performance with regard to a company's choice to use green incentives. Also, we observed that the pressure to conform and enhance environmental performance by using green incentives partly prevails over the pressure to mimic industry peers' behavior.

Regarding the time to adoption of green incentives, companies with a green strategy and greater experience in monitoring environmental performance adopt them at an earlier stage. Conversely, companies taking more time before adopting green incentives face higher conformity pressures to environmental performance and industry peer practices. In other words, companies driven by strategic control reasons are in a better position and adopt green incentives earlier than those driven by social conformity.

Overall, our study shows that organizations can be more responsive to environmental demands by introducing green monetary incentives. Managers can be driven by strategic control and social conformity when deciding to use them. Green incentives play a role in the green strategy implementation process, but organizations need to first develop knowledge and learn how to manage and measure environmental performance.

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STRATEGIC FINANCE

Step Up to the Fraud Prevention Challenge

Effective fraud prevention requires coordinated efforts among finance leaders, senior executives, board directors, and auditors.

By Daniel Butcher

Accounting and finance leaders, other senior executives, boards of directors, and auditors who communicate and collaborate can effectively fight the increasing threat of fraud. It's essential to develop an organizational culture of fraud awareness and prevention because dysfunction in, or a lack of emphasis on, ethics is often a root cause of fraud incidents, misconduct, and scandals. In addition, leaders must adapt to the changing regulatory landscape, as they can expect increased scrutiny of—and accountability for—fraud from governmental agencies and other regulators as well as the public moving forward.

A Foundation for Fraud Prevention

Cases of fraud reported to Action Fraud, the U.K.'s national reporting center for fraud and financially

motivated cybercrime, rose by one-third in 2020, according to an analysis by consumer rights group Which? Further, according to *Fraud Is on the Rise: Step up to the Challenge*—a research report based on a survey of senior internal auditors, risk professionals, and fraud experts from private, public, and third-sector entities by AuditBoard and the Chartered Institute of Internal Auditors (CIIA)—most participants of roundtable discussions agreed that there has been an increase of attempted fraud cases in their organizations.

"With fraud on the rise, organizations, including finance teams, must take a more proactive role in fighting fraud," says Richard Chambers, senior internal audit advisor at AuditBoard and former CEO of the Institute of Internal Auditors (IIA). "There are increasing regulatory pressures for company directors to take greater responsibility for ensuring there are robust controls in place to prevent and detect fraud.

"This means working closely with internal audit to set up and conduct regular and thorough fraud risk assessments, clear fraud policies, and prepare for new rules and regulations on fraud," he says. "Organizations should also play a more vital role in developing a strong fraud prevention culture."

Accounting and finance leaders who make a point to discuss ethics with their team regularly provide a foundation for establishing and reinforcing an organization's ethical culture and fraud prevention strategies. The latter include developing a robust fraud risk assessment, conducting regular assessments, and initiating anti-fraud policies, processes, and controls.

"A root cause of almost every major fraud scandal is dysfunction in the organization's corporate culture, so setting the right tone and nurturing a positive fraud culture across the organization is key and should start from the top with boards and senior management," Chambers says. "Developing a positive fraud prevention and awareness culture means encouraging openness and transparency with employees so they feel comfortable raising concerns and with the appropriate channels to do so.

"Individuals should set a strong tone against fraud and lead by example, especially at the top," he says. "Individuals should also learn, understand, and adhere to anti-fraud policies and processes."

Steps to Mitigate Workplace Fraud Risk

The onus of fraud risk policy and management is on senior management as the first line of defense and oversight. CFOs and upper management are instrumental in developing the right communications and supportive culture that encourage employees to choose the right path and say something if they see something. According to the Association of Certified Fraud Examiners (ACFE) 2020 *Report to the Nations*, a faulty tone at the top was the primary risk factor in 22% of all financial statement frauds.

Chambers recommends the following steps: introducing anti-fraud policies, processes, materials, and controls that protect people from temptation, coercion, and accusation, as well as discussing fraud-related issues openly and transparently with employees. He says that will help to increase awareness and eventually lead to better fraud prevention and detection. Additionally, accounting and finance leaders should stay approachable and available to discuss team members' ethical questions and suspicions of potential fraud.

Internal auditors can play a supporting role in better managing and mitigating fraud risks. The internal auditor's job is to ensure that the organization has conducted a thorough and up-to-date fraud risk assessment to find areas that may be exposed to fraud.

"It's internal audit's role to encourage managers to put sufficient and adequate controls in place to prevent and detect fraud, as well as to monitor how effective these controls are in practice," Chambers says. "They can also play an essential role in developing a positive fraud culture by helping remove the negativities attached to fraud and take an approach of being partners and allies—for example, depersonalize the processes and procedures when talking about fraud by anonymizing the instances and focusing on the themes, trends, and lessons learned instead.

"This will help more people become comfortable discussing fraud. Emphasize that your goal is not to police fraud but to build a safe environment for business departments to raise issues and concerns," he says. "While the responsibility of establishing and operating effective internal whistleblowing procedures lies with the executive, reporting to the board, internal audit has an important role as a trusted advisor to the board and the business by promoting whistleblowing best practices and advising on where change is needed."

Changing the Fraud Regulatory Landscape

In December 2021, the U.S. White House issued the *United States Strategy on Countering Corruption* report. The strategy outlines a whole-of-government approach to elevating the fight against corruption with five key pillars:

1. Modernizing, coordinating, and resourcing U.S. government efforts to fight corruption,

2. Curbing illicit finance,

3. Holding corrupt actors accountable,

4. Preserving and strengthening multilateral anti-corruption architecture, and

5. Improving diplomatic engagement and leveraging foreign assistance resources to achieve anti-corruption policy goals.

The U.S. Department of the Treasury's Financial Crimes Enforcement Network (FinCEN) also released government-wide anti-money laundering and combating the financing of terrorism (AML/CFT) priorities in June 2021, which include fraud. FinCEN has issued several fraud-related advisories, in particular concerning business email compromise, email account compromise, and COVID-19.

There have been significant developments in the U.K. approach to combating fraud as well, including the Economic Crime (Transparency and Enforcement) Act 2022. In addition, the Economic Crime and Corporate Transparency Act 2023 aims to strengthen powers to tackle illicit finance and reduce economic crime, including fraud. In June 2021, the Law Commission launched a consultation on behalf of the British government seeking views on whether and how the laws relating to corporate criminal liability can be improved so that they appropriately capture and punish criminal offenses committed by corporations and their directors or senior management.

"Organizations need to prepare for the increased scrutiny and accountability of fraud from the government, regulators, and the public—foremost, it's about minimizing risk and preparedness," Chambers says. "Boards, internal audit functions, and employees all need to take a more proactive role in the fight against fraud.

"Organizations must implement and communicate clear fraud policies and procedures, and monitor their adherence and relevance," he said. "They must also conduct regular and thorough

IMA Ethics Helpline

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Individuals outside of the U.S. and Canada may have to dial another toll-free access code first before dialing the Ethics Helpline. Please follow the instructions below:

- Visit the AT&T website.
- Find your country and its corresponding number on the page.
- Dial the numbers provided before you dial the ethics helpline number.

If you have trouble calling the toll-free numbers, please contact IMA Member Services at +1 (201) 573-9000 or ima@imanet.org for support.

If your country of residence is not listed on the AT&T web portal or if you experience difficulties accessing the Ethics Helpline, please email helpline@imanet.org. Please include your phone number along with the details of your ethical question, dilemma, or concern. All proprietary and personal details will be kept confidential.

Please visit IMA's Ethics Center.

fraud risk assessments that consider the internal and external factors impacting the business and develop a strong fraud prevention culture."

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STRATEGIC FINANCE

Managing Financial Services Relationships

The CFOs of 180 Life Sciences and Healthcare Triangle offer tips for working well with banking partners and navigating M&A.

By Daniel Butcher

One of the primary hurdles faced by pre-revenue healthcare, life sciences, and biotechnology companies—even more so than most start-ups—is the need for a substantial amount of capital to go through the product development cycle. Many companies are struggling to get enough financial support for their research and development (R&D) efforts. Competition for available funds is fierce.

In a conversation with *Strategic Finance*, Ozan Pamir, CFO of 180 Life Sciences, and Thyagarajan Ramachandran, CFO of Healthcare Triangle, talk about finance leaders' key role in building start-ups, the importance of vetting potential financial services partners and building banking relationships, and how to leverage financing to fund R&D and achieve strategic objectives.

SF: What tips can you provide CFOs of pre-revenue companies to navigate challenges?

Ramachandran: Using technology in strategic financial planning is critical in preparing for various scenarios, including building impact of clinical trial results, regulatory approval timelines, cost overrun in R&D, and having a contingency plan to adapt to unforeseen business outcomes. Finance professionals must regularly update financial planning and analysis, prioritize cash flows from multiple sources, and implement cost monitoring and controls without impacting research efforts.

In addition, finance professionals should keep exploring government grants, research assistance, and tax incentives on R&D spends to manage the cost of innovation prudently. This can improve financial resilience in start-ups and increase their chances for success in these highly competitive and regulated industries.

Pamir: Gaining a deep understanding of your industry, competitors, expenses, competing priorities, and scientific milestones is critical. Armed with this knowledge, finance professionals can then create robust financial models and rolling financial forecasts where the information is updated in real time.

In the challenging funding landscape, managing cash flow should always be a top priority. Ensure your business has a sufficiently long cash runway to withstand extended downturns. This necessitates regularly reviewing and adjusting budgets and significant capital expenditures proactively, rather than waiting for difficulties to arise.

An effective way to implement these practices is by fostering collaboration between your finance team and the scientific team. Involving the scientific team in the budgeting process not only helps you better understand their requirements, but also allows you to communicate any financial constraints you're dealing with. Since the priorities and financial needs of the scientific team may evolve over time, this collaborative approach leads to more efficient business operations.

When facing external financial challenges, it's essential to build strong relationships within the financial industry. This includes maintaining open lines of communication with bankers, lenders, and investors. Keeping them informed about your organization's financial health and plans is key. Additionally, exploring potential credit lines or financing options can ensure you have access to capital when needed.

SF: How should CFOs conduct research and do their due diligence when choosing an investment banking partner to secure funding?

Ramachandran: Research the banker's reputation and past deals that the firm has worked on within the last 12 to 18 months, and do an impact assessment of the success of these deals. It's also important to assess the banker's experience in managing deal sizes and industry experience. Investment bankers bring a lot of value by being familiar with the business, industry-specific valuations, and connections to strategic buyers. Capital raising is a time-consuming process; therefore, it's essential for finance teams to assess resource strength and the banker's ability to provide a committed, personal experience and have full trust with the banker in the fundraising journey.

Pamir: Many companies initiate their research into potential investment banking partners through warm introductions, and while this is a good starting point, it's essential to delve deeper. Expanding your search beyond your immediate network is crucial. Consider exploring the networks of your legal counsel and board of directors to identify potential contacts. While your personal connections and warm introductions can yield promising candidates, they might inadvertently exclude some suitable options. To avoid this limitation, another effective starting point is to examine league tables, which rank investment banks based on the number of completed deals and the funds raised, providing a foundation for your research.

However, it's important to recognize that league tables offer only one perspective. Scrutinize the details of the deals themselves. Not all closed deals are successful. If you notice a pattern where

a company's stock experiences significant downward pressure just before a deal announcement, followed by a flurry of activity at the deal's closing, exercise caution when considering such banks.

Additionally, it's vital to assess deals that never reached completion—a topic often left unspoken. Reach out to the CEOs or CFOs of these companies for candid feedback and insights into why these deals were canceled and whether they're contemplating future collaborations with the same investment bank.

During your evaluation process, it's necessary to identify what each potential investment banking partner brings to the table. Specialized banks with industry expertise can be more advantageous than generalist banks. Access to reputable equity analysts has become a pivotal aspect of an investment bank's offerings, as any coverage by their analyst will play a vital role in measuring deal success after the financing has closed.

Understanding the motivations and dynamics of investment banks is pivotal for your success. Bankers are primarily motivated by fees, and it's imperative to recognize that you aren't their sole client—investors also contribute significantly to their revenue. This understanding forms the foundation of every investment banking relationship and emphasizes the importance of selecting an honest and transparent banker to lead your transaction.

When reviewing various engagement letters, try to stay away from ongoing obligations such as rights of first refusal or extended periods of tail fees, both of which will handcuff you to a certain extent to the banker you're using. My preference would be to work with a banker confident in their abilities, without such terms in their engagement letter. Their performance should be the sole reason for continued collaboration. It's also essential to negotiate competitive success fees, cap legal expenses, and meticulously review termination clauses.

Furthermore, some additional features to consider in an investment bank include their ability to host specialized industry conferences and, if you're public, facilitate connections with new investors who may support your stock in the open market—a valuable bonus in your partnership.

SF: What questions do CFOs need to ask potential banking/financial services partners?

Pamir: As the CFO, it's your duty to have an in-depth understanding of your company, business goals, scientific objectives, and how they align with the overall business. You need to work collaboratively with your scientific team to understand their goals and align with the long-term business objectives. Develop a deep understanding of your company's capital needs and assess your options in obtaining this capital while working within the boundaries of the company's risk tolerance, especially when it comes to debt financing.

Financial partners, including your investment banking team, must possess in-house expertise to grasp the same business goals and the scientific foundation of your company. This is where the equity research department plays a pivotal role. Many investment banks rely on the vetting conducted by their equity research department, underscoring the importance of the executive team having a strong grasp of the business and effectively conveying it to financial partners.

Being transparent and forthright with your inquiries when evaluating potential investment banks is highly beneficial. Inquire about their track record and experience in handling transactions of similar size and complexity within your industry. Request references and introductions to other team members from equity research to capital markets to assess the overall cultural fit. Additionally, seek information about their preferred investors and the nature of their relationships with them. Most importantly, request references from other executives who have worked with the bank in the past but may not be on the reference list to gain insights into their experiences.

Your choice of a partner isn't only valuable for financing transactions but also for their industry expertise and network when pursuing other strategic initiatives such as M&A [mergers and acquisitions] deals and licensing agreements. Your investment banking partner should be capable of supporting you in achieving these strategic objectives.

Lastly, when dealing with specific investors and investment banks, it's crucial to thoroughly comprehend the terms they propose. Some banks offer unfavorable financing terms, and your company should endeavor to avoid these when possible.

Ramachandran: CFOs play a critical role in navigating and effectively managing capital-raising objectives of a company. The financial objectives should be aligned to the overall corporate objectives; thus, the CFO must evaluate a potential banker with a comprehensive understanding of the company's long-term vision, capital structure, and risk tolerance. The banker must be evaluated based on past track record, industry experience, and reputation of successful deal closure.

It's equally important to discuss investment philosophy with the banker, risk management, and metrics for performance evaluation. The fees' structure must also be discussed, and any performance-linked fees must be transparently evaluated. Risk mitigation by developing a contingency plan is critical if, for any reason, the banker encounters challenges in capital raising.

SF: What are M&A best practices and pitfalls to avoid?

Pamir: The M&A process commences by assessing the overall condition and objectives of the business. Depending on your goals, you must identify a merger or acquisition target or seek a buyer. Conducting a competitive process pays dividends. When considering acquisition, merger, or sale, engage with multiple parties.

The selection of the right advisory team also plays a vital role in this process. Your advisory team comprises investment bankers, legal advisors, and accountants. You should also create a comprehensive financial model that forecasts the potential impact of the transaction under various scenarios. This aids in identifying potential synergies and prompts discussions on integration strategies. Early integration planning is imperative. Failing to follow these steps and complete thorough due diligence with the available resources may lead to unexpected post-acquisition issues.

During the transaction, a continued due diligence process typically occurs. Collaborative, transparent, and communicative interactions among all parties are essential for an effective process. Ensure that integration planning is completed, and orchestrate the elements for a successful execution during the transaction process. Maintaining open lines of communication with existing and prospective shareholders is necessary. Following the M&A transaction, diligent performance monitoring and integration execution are vital to realizing the anticipated synergies discovered early in the process.

In 2019, we embarked on comprehensive strategic planning and due diligence processes, culminating in the merger of three companies that birthed 180 Life Sciences. Following the identification of potential merger benefits, teams focused on integration planning. This encompassed decisions about organizational structure, key personnel selection, and operational streamlining to eliminate redundancies and boost efficiency. Meticulous planning was essential for ensuring a smooth transition and minimizing disruptions.

As the CFO of the combined entity, I assumed a critical role in assessing the financial health of the merged organization and comprehending the financial implications of the merger. I spearheaded efforts to secure essential funding through private financing rounds. Additionally, I took charge of communicating with both existing and new investors throughout the merger process.

Transparent and clear communication with investors is paramount to garnering their support during such transactions. Post-merger completion, my focus shifted to integration efforts, including the consolidation of financial infrastructure, realization of planned efficiencies, alignment of research and development activities, and resource optimization to drive growth and achieve milestones.

Ramachandran: M&A transactions are time-consuming and complex in nature; it's therefore crucial to develop an M&A strategy that aligns with the organization's overall business objectives. Evaluate any potential M&A through comprehensive due diligence covering the

financials, key employees, intellectual property, customer contracts, legal obligations, and cultural fit.

During the M&A process, it's important to maintain transparent communication with employees, board members, and investors to build trust. Monitor customer project risks during the M&A to ensure that these are adequately mitigated.

Post-merger, assess the progress of the integration and monitor financial performance vs. initial plans. It's crucial to motivate and retain key talent to ensure that they're integrated as part of the new org structure. Keep communicating with the board and investors on progress and benefits from the merger.

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STRATEGIC FINANCE

Small Business vs. IP Trolls

Given the impact on innovation and the bottom line, small businesses must shore up protections against intellectual property trolls.

By Dana Riess, CMA, CFM, CSCP, CPIM

In today's interconnected global economy, securing protection of intellectual property (IP), such as trademarks and patents, is an indispensable requirement for businesses. Trademarks function as an identifier for distinguishing the goods and services of one entity from those of others. This could be brand names, a color combination, or logos, for example. Trademarks play a pivotal role in worldwide branding and marketing strategies, as companies seek to provide their goods and services to a public that is less restricted by international borders. A patent is a form of intellectual property protection that gives the creator of an invention the exclusive legal right to market, sell, manufacture, and profit from that technology. Historically, patent protection was designed to encourage innovation and the disclosure of the details of new inventions.

In some countries, such as the United States, Australia, and India, the "first-to-use" principle is followed, which establishes that exclusive rights to the patent or trademark is granted to those parties that start using the IP first in commerce. In contrast, the "first-to-file" principle is followed

in other countries such as China, Russia, and Japan, as well as in the European Union, and establishes that the right to the trademark/patent belongs to the business whose application has the earliest date of filing. In first-to-file countries, the date of filing is important, not the date when the trademark was first used in commerce. Most countries in the world are first-to-file IP countries, regardless of who used it first. Unfortunately, trolls can operate successfully in either system.

What Is Trademark or Patent Trolling?

It's a practice in which individuals or companies ("trolls") acquire intellectual property (IP) rights with the sole intention of using them to generate revenue through licensing fees or litigation, rather than producing actual products or services. This practice can be especially harmful to small businesses, which often lack the resources to defend themselves against infringement lawsuits.

Enter the Trolls

Applying for a trademark that has already been registered in other countries or for different goods/services with the purpose of extracting financial benefits is considered an opportunistic trademark registration. Opportunistic trademark registrations can include applying for a translated trademark, a company name, domain name, logo, or even a color used by a new or well-known mark. For example, a nonpracticing entity (NPE) that doesn't use a mark in conjunction with the actual sale of goods or services files for a trademark in China, based on a legitimate brand owner's mark before the owner enters the Chinese market. When the original brand owner tries to tap the Chinese market, they find their mark already hijacked. These NPE trademark holders that generate or attempt to generate earnings by enforcing their trademarks through malicious litigation are commonly defined as "trademark trolls."

Similarly, a company that obtains the rights to one or more patents in order to profit by means of licensing or litigation, rather than by producing its own goods or services, might be considered a "patent troll." (For more details, see "What Is Trademark or Patent Trolling?") This can be particularly threatening in regard to digital technology and software, including fintech, whereby patents often consist of only general terminology, vague terms, or computer jargon, and no actual programming code.

The menace of trolling is more prevalent in first-to-file countries because trolls don't have to invest or bring a patent or trademark into "use." However, even in first-to-use countries, the issue of trademark trolling is common. In the U.S., for example, which is a first-to-use country, to obtain federal registration with the U.S. Patent and Trademark Office, a trademark must be used in U.S. commerce via the sale of goods or services. To fulfill the use requirement, applicants often submit photos of their products bearing the trademark in question or submit screenshots that show their trademarked products are available for purchase online. Unfortunately, in the Digital Age, trolls can easily put a newfound trademark to supposed "use" by creating a website, equipping the site with a secure payment method, and "using" the trademark there. Others simply submit "dummy" specimens, digitally altered photos of goods supposedly bearing the mark sought to be registered.

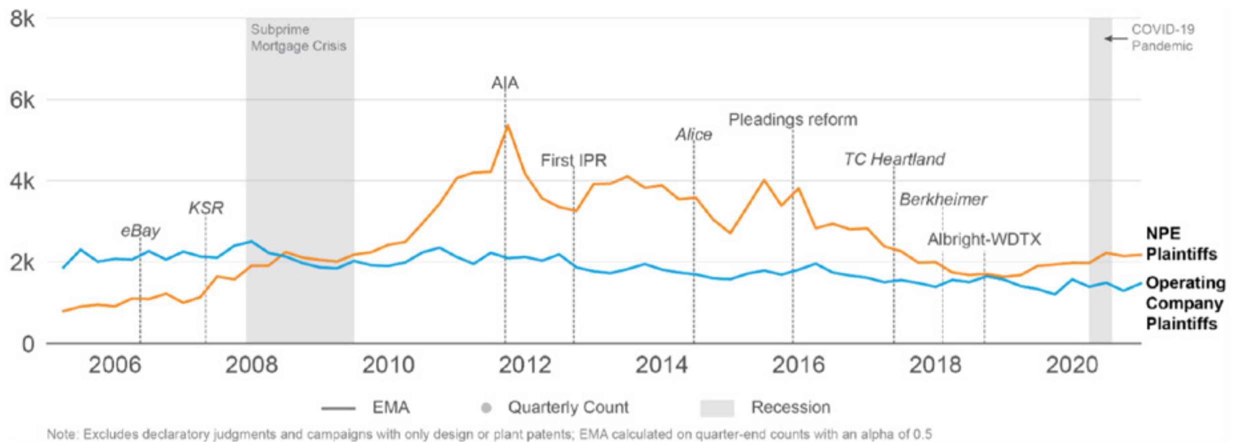
Small businesses may be targeted by NPEs or IP trolls because they often lack the legal resources and expertise to navigate complex litigation, and settling a patent or trademark lawsuit can be expensive and time-consuming. In some cases, these trolls may use the threat of litigation to extract licensing fees from small businesses or the outright purchase of brand rights for an exorbitant fee, even if the troll's patent or trademark in question is of dubious validity because the troll was first to register in his country.

Impact on Small Business and Innovation

Abusive patent lawsuits are on the rise, and the impact on American innovation is devastating.

U.S. patent litigation statistics show that total litigation more than doubled from 2005 to a peak in 2011–2012 but has dropped by half since then. Most of that long-term trend has been driven by NPE companies whose primary focus is making money from patent licensing, not providing services or goods, while for companies that derive most of their total revenue from product sales or services (operating companies), patent litigation has been on a gentle downtrend since 2005 (see Figure 1).

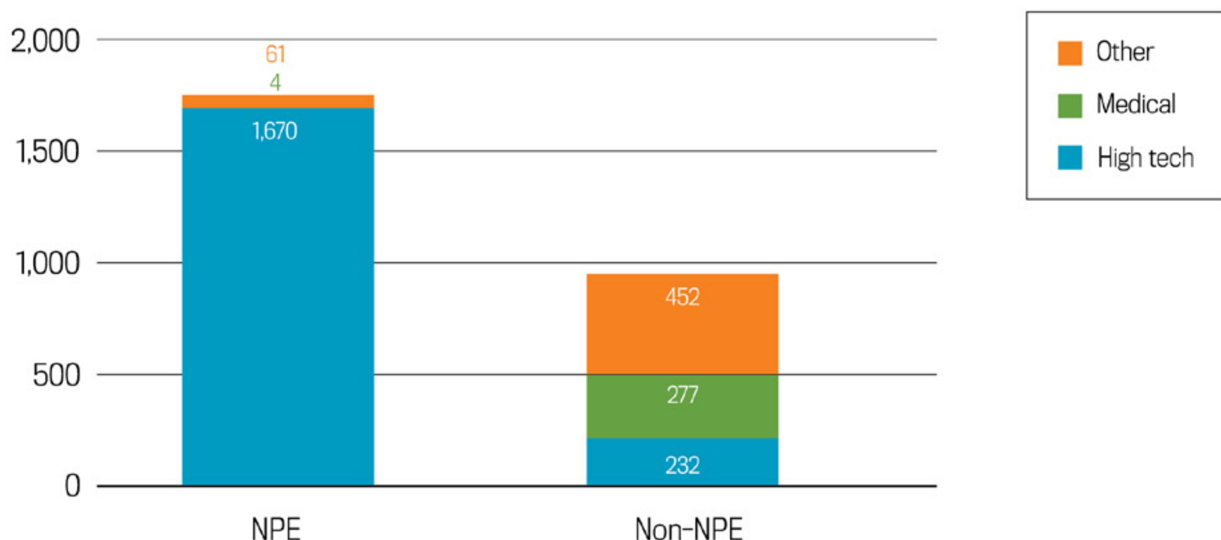
FIGURE 1: PATENT LITIGATION REVENUE



Source: What 15 Years of US Patent Litigation Data Reveal About the IP Market, RPX Insight, January 25, 2021.

In the first three quarters of 2022, 64% of all patent lawsuits in the U.S. were filed by NPEs. In the high-tech space, patent trolls filed 88% of all lawsuits. NPEs targeted high-tech companies 95% of the time in 2022, while non-NPEs targeted high-tech companies only 27% of the time (see Figure 2).

FIGURE 2: DISTRICT COURT LITIGATION BY INDUSTRY AND ENTITY TYPE IN 2022

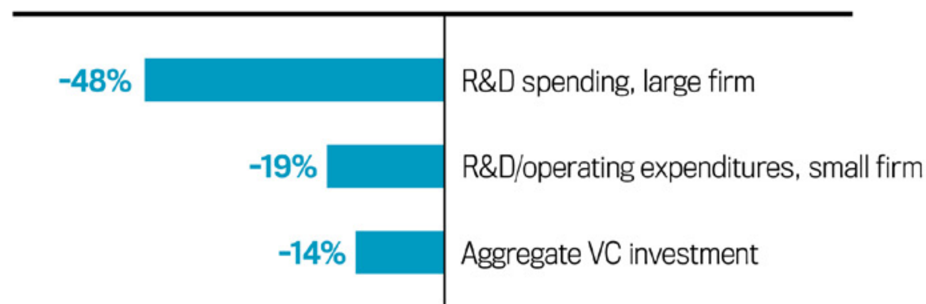


Source: 2022 Patent Dispute Report: 3rd Quarter in Review, Unified Patents, October 3, 2022.

While patent trolls have been a nuisance for years, the explosion of technology in fintech has created a target-rich environment for those trolling the industry. Fifty years ago, financial services meant moving paper money around. Now the industry is a maze of cutting-edge technologies—cybersecurity, Big Data, networking, cloud computing, encryption, and mobile payments—perfect for patent trolls to file dubious claims.

Research by Boston University shows that patent trolls cost defendant organizations $29 billion per year in direct out-of-pocket costs; in aggregate, patent litigation destroys more than $60 billion in company wealth each year, and mean damages in a patent lawsuit are about $21 million. Further, these costs fall disproportionately on innovative entities: The more research and development (R&D) a company performs, the more likely it is to be sued for patent infringement, all else equal (see Figure 3).

FIGURE 3: EFFECT OF PATENT TROLL LAWSUITS ON INNOVATION



Source: James Bessen, The Evidence Is In: Patent Trolls Do Hurt Innovation, *Harvard Business Review*, November 2014.

Studies by MIT researchers found, for example, that medical imaging businesses sued by patent trolls reported reduced revenues and innovations relative to other comparable companies not sued. The study confirmed that reduced revenues weren't due to a suppression in underlying demand by hospitals, but instead linked to a lack of incremental product innovation during the period of litigation.

Although large companies tend to dominate patent headlines, a Santa Clara Law School research study found that the biggest impact is on small start-ups—companies with less than $100 million in annual revenue. They represent at least 66% of unique defendants in troll suits, and at least 55% of unique defendants in troll suits make $10 million per year or less. Those companies that settle with patent trolls, or lose to them in court, wind up reducing investments in R&D by an average of more than $160 million over the next two years. Of survey respondents, a large percentage reported a "significant operational impact," such as delayed hiring or achievement of a milestone, change in the product, pivot in business strategy, shutting down a business line or the entire business, and/or lost valuation. The smaller the company, the more likely it was to report one or more significant operational impacts.

Countries Combating IP Trolling

According to Patent Trolls and Small Business Employment, published by Ian Appel, Joan Farre-Mensa, and Elena Simintzi, "Anti-troll legislation is also associated with fewer business bankruptcies. Financing appears to be a key channel driving our findings: in states with an already established VC presence, the passage of anti-troll laws leads to a 19% increase in the number of firms receiving VC funding." Their findings suggest that measures aimed at curbing the litigation threat posed by patent trolls may play an important role in reducing the financing frictions faced by small businesses.

In recent years, there have been multiple court verdicts, in addition to efforts to reform IP laws, to reduce the impact of these trolls on small businesses and the broader economy. This may include reforms to the system to make it more difficult for patent trolls to acquire and assert weak or vague patents, as well as measures to streamline the litigation process and reduce the costs of defending against frivolous lawsuits.

Europe. The Court of Justice of the European Union has stated in several cases that a trademark application made without any intention to use the mark in relation to goods and/or services constitutes bad faith and thus can be invalidated.

India. A statutory provision recognizing the prior use of a trademark is provided under Section 34 of the Trade Marks Act, 1999. This section protects vested rights so that the proprietor of a registered trademark or registered user can't interfere with the use of any identical or similar mark if the person has been using the mark from an earlier date.

China. The 2013 amendments to the Trademark Law of the People's Republic of China provided exemptions from the liability to compensate infringement of a registered trademark, including in situations where the owner of the registered trademark "is neither able to prove its actual use of the registered trademark during the past three years prior to the lawsuit, nor able to prove other losses suffered as a result of the infringement."

China's Supreme People's Court struck a heavy blow to trademark trolls in its 2018 Uniqlo judgment, demonstrating that bad faith trademark holders and the malicious litigations they initiate won't be supported by the court. In keeping pace with that decision, the Chinese legislature enacted amendments to the Trademark Law in April 2019 to address bad faith trademark registration. Under the 2019 amendments, if an individual, company, or organization files a malicious trademark application without an intent to use the mark, the application shall be rejected and constitutes grounds for opposition and invalidation.

The amendments further provide that if trademark agencies know, or should have known, that their client is filing a malicious trademark application without an intent to use the mark, the trademark agencies should decline to file the application for their client or they'll be subject to fines. Furthermore, malicious trademark applications are punishable by the administrative authorities, and malicious trademark litigations are likewise punishable by the courts.

U.S. In 2011, the U.S. Congress recognized that its patent system needed a significant overhaul and a large bipartisan majority in the House of Representatives and Senate passed the Leahy-Smith America Invents Act (AIA). The AIA made several changes, shifting the U.S. from a first-to-invent to a first-to-file patent system and creating a review process at the

If Your Business Falls Prey to a Troll

- Consider having communications with the troll notarized and bringing notaries to meetings; notarized evidence of bad faith has a unique and important probative value before courts in many countries.
- Review the troll's trademark filings for evidence that it has applied for illegitimate trademarks, a fact that increases the possibility that a court will find bad faith.
- Check the troll's litigation history to see if the troll has a prior record of filing malicious lawsuits against legitimate brand owners.
- Review company records to see if the troll was a previous trading partner of your business.
- Consider whether you have other intellectual property rights that can be asserted against the troll, such as copyrights, trade name rights, or an individual's right of publicity.
- If the troll hasn't used the registered mark for three years after registration, it can be subject to challenge via a non-use cancellation action.

Patent Trial and Appeal Board to allow expert judges to review patents of questionable validity.

In June 2014, in what was a "bad day for bad patents," the U.S. Supreme Court in the case of *Alice Corp. v. CLS Bank International* unanimously struck down the concept of an abstract software patent, by which the court ruled that applying the words "on a computer" to an abstract idea doesn't make it patentable. The Alice precedent has been effective in knocking out many software patents that should never have been issued in the first place.

Strategic Considerations

To protect against patent or trademark trolls, small businesses can take several steps. First, business owners should think globally when it comes to protecting intellectual property. Securing patent and trademark rights in the U.S. may seem sufficient, but if your company plans (or hopes) to expand internationally in the future, consider proactively filing IP applications in those countries, especially in first-to-file jurisdictions, as a defense against infringement claims. This should include filing transliteration trademarks in the local language of the country. Under the Madrid System, one can file one application for several countries by paying only one official fee, with the priority claim helping to establish rights in these countries before the date of application.

Be diligent in researching and identifying any patents, trademarks, or possible trolls that may be relevant to your business's products or services before you expand to other countries. Another option may be to hire a company to monitor trademark or patent rights. This can help avoid infringing on existing patents and potentially being targeted by trolls.

Keep abreast of the changes in the local laws of a relevant country. For example, in June 2019, Canada changed its trademark laws from first-to-use to first-to-file. Small businesses should seek out legal advice and support to help navigate any IP disputes that may arise. Small businesses can also consider purchasing liability insurance that covers infringement claims.

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SF STRATEGIC FINANCE

You Can't Manage What You Can't Measure

Access to actionable, current data enables companies to make more effective decisions related to people, resources, and areas of focus.

By Jason Peterson

Many of us have probably heard some version of the expression, "You can't manage what you can't measure." This focus on measurement is usually combined with target setting, and then regular reviews are established to ensure each business unit is making its numbers. This often takes the form of quarterly, monthly, or even weekly reviews, with substantial time spent preparing for and attending formal in-person meetings.

Unfortunately, rather than providing a meaningful opportunity to discuss legitimate business challenges, these meetings often invoke fear: Missing revenue, profitability, or expense targets requires explanation and often results in some form of corrective action and, at a minimum, shaming. If targets aren't met over several measurement periods, executive leadership steps in to direct next steps and help business unit management get back on track.

Introducing fear into a business review process doesn't result in changed behavior or solutions to business challenges. In fact, it often inhibits positive change. Fear-based leadership can reduce innovation and initiative and often create self-doubt, which isn't ideal when your team is facing adversity. Under these circumstances, employees are less likely to self-identify challenges or problems and take responsibility for any mistakes. Once fear is present in a review process, employees often just provide guarded and paralyzed responses.

An alternative approach creates superior results: Expectations should be clearly communicated, and teams must be enabled with data and encouraged to make decisions quickly, bringing about momentum to execute. The goal is to enable people to think creatively. Pressuring people into making quotas and meeting deadlines inhibits creativity and does little to overcome business problems.

If a company isn't careful, so much time can go into preparing to present to executive leadership that management has little time left to work on actual issues. The book *American Icon: Alan Mulally and the Fight to Save Ford Motor Company* by Bryce G. Hoffman describes a transition from ruling with fear to managing via honesty. The book is the story of Ford Motor Company's turnaround under the leadership of CEO Alan Mulally. After joining Ford, Mulally started doing reviews every Saturday, leading to every business unit attempting to present their results as favorably as possible.

Finally, one business unit head conceded that he wouldn't make his numbers. While many of his peers thought that this business unit head was doomed, Mulally responded by saying, "Good. Now what can we do to fix that?" Honesty is beneficial because leaders need to be informed early when teams are facing challenges. Failing to acknowledge issues prevents an organization from addressing them. To fix a problem or a shortcoming, you first need to admit that it exists and own up to it. Companies should encourage the openness and candor championed in Hoffman's book.

Setting Business Goals

Let's next discuss the business target-setting process to make clear how unfair it can be to penalize business management teams that aren't making their numbers. Many financial leaders recognize the difficulties associated with setting challenging but fair targets for revenue growth, profitability, and other operating metrics. Some business leaders believe in extreme "stretch goals" for revenue growth or market share improvement: They think they should go big and give targets that are nearly unachievable to one or more business units, while other business units get targets that are far less challenging. When businesses with nearly impossible targets almost achieve them, they're deemed as having failed, while businesses with easier targets are celebrated if they barely meet their much-more-achievable goals. Difficult targets include drastic changes in business strategy or focusing on achieving a specific amount of revenue over a given time frame, while easier targets can include increasing employee productivity or improving work practices.

Even if targets are well constructed, some business units get lucky when an unexpected client opportunity drops into their laps or when unforeseen demand for their product is discovered by accident, resulting in greater than anticipated revenues. Others might experience competition from an unpredicted market entrant or reduced demand due to a natural disaster in a key geographic market negatively impacting revenue. Individual targets are often not updated during the year in response to these changing circumstances, leaving one business with a near- impossible challenge and the other with a much easier road to travel. Moreover, people need to understand how their individual contributions drive the company's success.

We spend a lot of our lives at work. In fact, the average person will spend one-third of their life working—don't forget to tack on an hour spent getting to and from work each day for those coming into the office. With all this time spent, we want our contributions to matter. We want to know that our efforts to deliver goods and services to our customers help create a more successful business. People understand when they aren't achieving their targets and don't always need to be reminded that they're missing the targets. Companies will get results that far exceed expectations if they set reasonable goals, encourage overachievement where possible, and allow people to

interact with their peers to discuss approaches that have produced success in other parts of the business and let them freely apply their own creativity.

Broad Access to Data

Yet these practices need support from measurements, or data. The more traditional approach where companies conduct formal periodic reviews with only a few senior decision makers present no longer works. Why not make the data broadly available and update results daily or even more frequently, if possible? That way, you get broad employee engagement. With all oars pulling in the same direction, a company can make rapid changes in response to evolving circumstances.

Financial leaders can support such an environment by providing the broader company with data, ideally converted into consumable information. Employees should know when their business is underperforming, and, when supplied with actionable insights, they will be more able to identify specific drivers of shortcomings and work to correct them. Similarly, executive leadership must also be comfortable working closely with data and should be able to use data to critically evaluate changes in business results and the operating environment to adjust to evolving circumstances and make decisions quickly.

This approach sets targets as part of an annual plan. Companies then should frequently revisit these targets and update forecasts and expectations in response to changing markets. Optimally, they should then measure, report, and create dashboards using new data streams to support the ever-changing business. This information is broadly disseminated, and data is usually refreshed or updated daily in near-real time.

Where possible, businesses need to prioritize data organization from the beginning, as it will be much easier to maintain and organize that data over time. For example, an organization can develop digital business platforms, collect data, and continue to maintain and enhance these platforms and the organization of data. The business will then have a significant data pool on both employees and customers, or any other business asset the company wishes to measure and better understand. This isn't to say that a company that hasn't meticulously gathered and categorized data from day one is doomed. While some extra effort may be required, a business can achieve greater efficiencies by striving to improve the immediacy of its information. Data is best utilized and analyzed when current or "fresh."

To stay competitive, companies need to have the capability to refresh data frequently so that their finance teams and businesses can quickly determine what decisions to make before the situation changes and the data is no longer useful. Nevertheless, obtaining fresh data to make better business decisions is perhaps the greatest challenge faced by CFOs and financial managers. It can be a significant challenge for any business, regardless of size. Sometimes, it's helpful to find an experienced partner to help establish and build the necessary infrastructure and systems.

Data and Its Use in Decision Making

The COVID-19 pandemic and recent geopolitical events have impacted companies globally. At EPAM Systems, we were able to track employee productivity during the COVID-19 pandemic even after all employees began working from home. The company was also able to see rapid changes in specific customer demand (remember that daily sales pipeline report previously mentioned) and adjust staffing as necessary. It transferred workers who were allocated to projects that were ramping down to other customer projects where there was still demand.

By not hiring for new projects and instead deploying existing underutilized staff, EPAM prevented overstaffing during periods of too few billable hours. Once demand improved, hiring accelerated. EPAM was able to reduce the impact on employees, manage profitability to acceptable levels, and then reaccelerate revenue growth as it came out of the initial crisis. EPAM did this by updating reports and analyses daily and meeting as a leadership team (also daily) to do a quick informal review of changes, make decisions, and set new objectives.

For companies operating in Ukraine, the Russian invasion of that country created a need for up-to-date information on employees to maintain business operations and, more importantly, to ensure their safety. At EPAM, we needed to know where employees were located and how they were doing and then needed to track their progress as we worked to move them, and their families, to safety. Much like the pandemic, when we examined analytics to see what was happening to the customer pipeline and how it matched up with supply, the same concept was used to prioritize the safety of employees. This data allowed EPAM to support employees and their families and empowered the company to meet customer delivery goals despite challenges. The availability of near-real-time data helps the company support its employees while enabling it to meet customer commitments and maintain the business.

Further Resources

***Strategic Finance* articles**

Elhadi E. Elimam, Leading with Data Analytics, July 2023.

Jennifer Riley, Pamela J. Schmidt, and Kimberly Swanson Church, An SME Approach to Data Analytics, May 2022.

Kristine M. Brands, Data Analytics for Management Accountants, November 2020.

Daniel Smith and Lisa Heffernan, Transforming Analytics through Data Governance, January 2019.

Hirav Shah and Loreal Jiles, A Data-Driven Approach to the Pandemic, September 2020.

Hans Weemaes, Leadership in the Age of Big Data, January 2023.

Tatyana Corban, Data as a Strategic Asset, April 2021.

Courses

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You Can't Manage What You Measure Ineffectively

Some companies are able to measure results with frequent data collection and analysis and make rapid decisions in response to changing circumstances. However, this probably doesn't apply to the majority. Many companies haven't organized their data or created data-capture systems that allow near-real-time measurement. Actionable, current information enables companies to make more effective decisions related to people, resources, and areas of focus, and is key in responding to change.

For organizations to drive better business outcomes, they should also critically evaluate their business review and target-setting processes. In many cases, these processes could likely be less rigid and formal. Leaders should make performance expectations clear and give people room to collaborate and deliver outcomes.

Lastly, companies need to accept that they can't control all the unexpected changes in their operating environment. The world is an increasingly unpredictable place. Leaders can, however, make frequent adjustments in their targets and goals in response to changing conditions and then work hard to achieve these goals. If companies change their approach to results measurement, they will be happy with the results.

Jason Peterson is senior vice president, CFO, and treasurer of EPAM Systems, Inc. You can reach him on LinkedIn.

SF STRATEGICFINANCE

Value Drivers for Financial Planning

By selecting relevant and accepted value drivers, companies can make informed decisions in a VUCA environment.

By Michael J. Weiser, Michael Nudelmann, Klaus Möller, and Payam Farahi

Financial planning systems are geared to secure two main financial goals of a company: gaining profitability and securing financial stability. Forecasts are a crucial addition to any financial planning system to steer corporate performance, i.e., identify measures to secure the financial goals early on. While financial planning allocates appropriate resources to corporate operations, financial forecasting predicts how key performance indicators (KPIs) will develop as objectively as possible. Importantly, these forecasts are independent of plans, thus enabling management to make informed decisions and adapt actions to reach corporate goals.

The case of the multinational crystal jewelry designer Swarovski illustrates the challenges in the evolution of the planning process from traditional budgets to analytics-induced driver-based planning and forecasting for better decision making (see also Renita Wolf's 2015 *Strategic Finance* article Broken Budgets?). These driver-based planning and forecasting systems, when distilled to

their smallest unit, consist of a set of value drivers. Value drivers represent the key influencing factors of a business model. In a driver model, value drivers are mathematically combined as interdependent variables, meaning they systematically relate the performance-driving activities of companies to the financial and strategic performance measures they influence.

Driver models help analyze organizational developments as they combine cause-and-effect relationships and time effects. These cause-and-effect relationships can be visualized in a driver tree chart to further enhance the understanding and communication of a business model. By translating the business model into value drivers, driver models can be used to simulate different scenarios for planning and forecasting. This characteristic is particularly vital for companies operating within a VUCA (volatile, uncertain, complex, and ambiguous) environment. Driver models shed light on the effects of changes in individual value drivers on top KPIs (e.g., return on capital employed) and enhance the understanding of the business model with its specific steering levers.

Value drivers can be financial and nonfinancial. This duality is also reflected in Principle 9 of the IMA® (Institute of Management Accountants) report *Key Principles of Effective Financial Planning and Analysis*. For example, the DuPont (return on investment or ROI) analysis tree is a sole financial driver model that analytically decomposes the ROI into multiple financial accounting metrics (e.g., sales, inventory, or operating expenses). However, financial driver models don't consider how revenue is generated. Revenue generation is highly dependent on the business model of the individual company and requires the inclusion of nonfinancial value drivers (e.g., store types, experience of the sales force, price elasticities, or social media sentiment). As business models and value drivers differ considerably across industries, strategies, and setups, there's no all-encompassing driver model off the shelf. Even within a company—from the group level to business units, functions, or markets—many individual driver models can be used autonomously or combined toward the top KPIs. For example, an operating expense driver tree can be broken down into several individual trees (e.g., per business unit). The resulting cascade of driver trees reduces individual driver tree complexity, making them easier to understand, communicate, and discuss.

Given the company-specific nature of driver models and their division into sub-models, value driver selection is a complex task and turns out to be a major challenge for companies in the implementation of driver-based planning and forecasting.

The Era of Driver Models

Swarovski, a global manufacturer and retailer of high-end cut crystal stones, offers a representative case study on the evolution of financial planning and forecasting within established companies. The focus of this article is the crystal business of Swarovski, operating in more than 150 countries and including more than 2,400 retail stores at prime locations. With a history spanning more than 125 years, the company has navigated various stages that are typical in the development of financial planning systems and practices, influenced by both internal and external factors—a phenomenon well-framed in the contingency theory of management accounting.

Historically, Swarovski used an annual, locally driven, bottom-up planning and forecasting approach rooted in a decentralized organizational structure for decades. However, this method proved to be time-consuming due to the granularity of the planning depth and silo thinking within the organization. In the early 2000s, the need for more efficient financial control became evident in the face of rising competition from Asia and the shift toward a direct distribution model, which required increased (store-level) planning granularity and capital expenditure planning.

The 2008 financial crisis further strained Swarovski's financial planning, prompting the adoption of shorter quarterly forecasting cycles to better navigate economic uncertainties, as also suggested by research. Yet the postcrisis period brought renewed competition, pressuring the company to streamline its processes and reduce planning granularity combined with a rolling

forecast approach. Despite these efforts, the persistence of siloed thinking and management's demand for detailed information led to an even more time-consuming planning process, hindering agile decision making.

During the COVID-19 pandemic, Swarovski had to shift to a weekly, top-down predictive forecasting model out of necessity to deal with the extreme uncertainty. This solution was significantly faster and more accurate than the previous manual, bottom-up forecasting approaches. This enabled local financial managers to focus more on the operative steering of the business amidst the crisis, as there were too many uncertain variables to produce meaningful bottom-up forecasts anyway. Ultimately, this environment facilitated the decision to adopt a more centralized planning approach and created a certain level of acceptance for predictive analytics in financial planning and forecasting.

Swarovski's Driver-Based Approach

In the aftermath of the COVID-19 pandemic's peak turbulence, Swarovski pinpointed driver-based planning as a promising approach to address the challenges of reinstating the high level of planning granularity traditionally demanded by management with more frequent (monthly) forecasting cycles due to the increased uncertainty, while keeping the planning and forecasting processes efficient because of market pressures. As the top-down predictive planning and forecasting approach demonstrated its efficacy during the pandemic, enabling proactive responses to environmental changes, Swarovski decided to incorporate predictive analytics and implement a predictive driver-based planning and forecasting solution across the entire group. To generate quick wins and gain a deeper understanding of the potential of driver models, Swarovski decided to focus resources and commence its driver-based planning journey with one of its top KPIs—the net sales of its business-to-consumer crystal business.

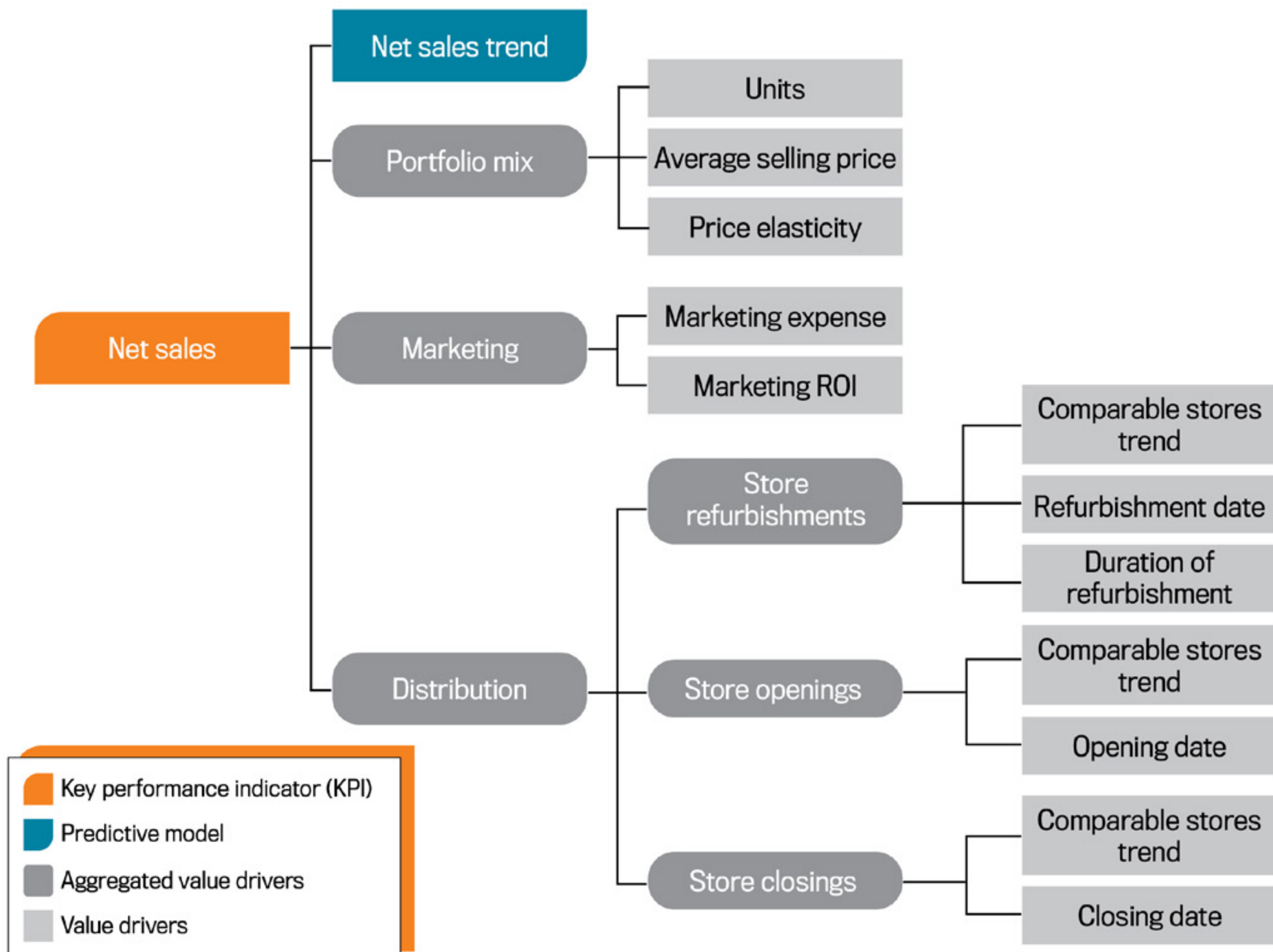
Swarovski's net-sales driver model. As a retail-driven organization, Swarovski decided to implement the net sales driver model as one core element of its future financial planning system. The model employs a hybrid planning and forecasting approach by combining a top-down automated forecast of the baseline net sales trend using a predictive model and a bottom-up adjustment of the net sales value drivers to account for effects not reflected in historical data patterns (e.g., the planned refurbishment of a flagship store). The resulting net sales figures can then be broken down to individual stores using an allocation key logic.

Swarovski's predictive model. The data-driven baseline net sales trend is predicted using a time series model that learns from 10 years of historical net sales data. Multiple time series models (e.g., Prophet, autoregressive integrated moving average, and exponential smoothing) compete against each other, and the best-performing single model or ensemble of multiple models is selected for the final prediction. The prediction doesn't account for changes in the other net sales drivers and thus is merely the starting point of the planning and forecasting process. However, Swarovski is also experimenting with causal models that take into account the effect of macroeconomic factors such as gross domestic product (GDP) growth, consumer spending, or inflation. The baseline prediction provides management with a rapid initial forecast and leaves more time for discussions on the developments of the business model and its drivers. Predictive analytics enables automated and evidence-based forecasts at the push of a button, and its merits and pitfalls for financial planning and forecasting have been widely discussed.

Swarovski's value drivers. Besides the baseline net sales trend, three aggregated value drivers best explain Swarovski's net sales: the portfolio mix, marketing, and distribution (see Figure 1). For the portfolio mix, price elasticities, average selling prices, and units sold at the market level were selected as main value drivers to estimate how Swarovski's product portfolio and pricing strategy influence net sales. The marketing effect on net sales is driven by the marketing expenses and the expected marketing ROI. The distribution driver deduces the net sales effect from the number of active retail stores and, thus, is mainly driven by the opening,

closing, and refurbishment of stores. For example, the refurbishment of a store usually decreases sales during construction. But after reopening, sales increase due to elevated customer interest. Swarovski uses the historic patterns of comparable stores to model these sales effects.

FIGURE 1: NET SALES DRIVER MODEL AT SWAROVSKI



Augmented intelligence. The predictive driver-based model combines a top-down approach using a predictive model with bottom-up adjustments using value drivers. This form of an augmented intelligence system employs value drivers to augment the net sales trend prediction, following a traceable driver model logic. By separating the planning and forecasting process into a predictive model and manual adjustments, the strengths of both predictive analytics and the business acumen of the management accountant can be combined. The driver tree helps to structure the judgmental adjustments of the net sales trend prediction while also enhancing transparency. This is achieved by making business assumptions explicit through the driver model and focusing on the lowest level of analysis (the value driver), rather than directly adjusting net sales.

Technology. Swarovski has implemented its driver-based planning and forecasting solution by integrating various data and analytics platforms. A business warehouse solution aggregates the granular primary data from an enterprise resource planning system. This data is then transferred to a data and analytics cloud platform that runs the baseline net sales trend predictive models. In

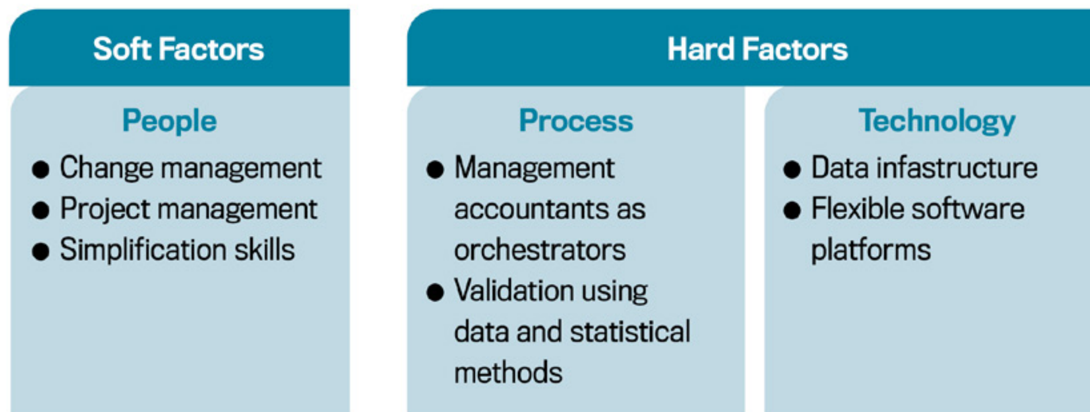
the final step, the results are loaded into a cloud planning platform that supports driver-based data models and interactive user interfaces to adjust the predictions and simulate different scenarios using the value drivers.

Since the inception of the net sales driver model, Swarovski has rolled out driver-based planning and forecasting to several markets and to further top KPIs. The application of driver-based planning and forecasting has numerous benefits in terms of efficiency and accuracy for the company. For instance, manual labor and error rates could be significantly reduced through an automated data-integration process. Using the net sales driver model has more than doubled the accuracy of its net sales forecasts compared to the previous traditional bottom-up approach. Additionally, transparency about the buildup of plan figures was enhanced while shortening the planning and forecasting cycles to enable more agile financial steering. Overall, it took one year to implement the first fully driver-based planning cycle.

Implementation of Driver Models

Several interviews within Swarovski on the implementation project corroborated that organizations should consider three essential levers for a successful transformation toward driver-based planning and forecasting: people, process, and technology. Across these three levers, management accountants take the role of orchestrators driving driver-based planning initiatives. The orchestrators need to acknowledge the change management characteristics of financial planning system transformations, where soft factors mostly outweigh hard factors (see Figure 2).

FIGURE 2: REQUIREMENTS FOR DRIVER-BASED PLANNING AND FORECASTING TRANSFORMATIONS



People. The key to success in designing a driver model is acceptance and buy-in from all involved stakeholders, regardless of the driver model's accuracy or deliberate construction. If stakeholders don't accept the selected drivers, even the most sophisticated model is worthless. Nearly everyone with business acumen can select value drivers, as most are already known and common sense within organizations. Nevertheless, selected drivers won't be accepted without proper change management efforts due to a lack of trust in the driver-based planning and forecasting methodology. Mistrust in the driver model results in business units establishing shadow forecasts and plans that subvert the implementation of the driver model. Likewise, a CFO study reported that, besides costs, insufficient implementation and change management skills are among the most severe barriers to adopting new technologies in financial planning and forecasting.

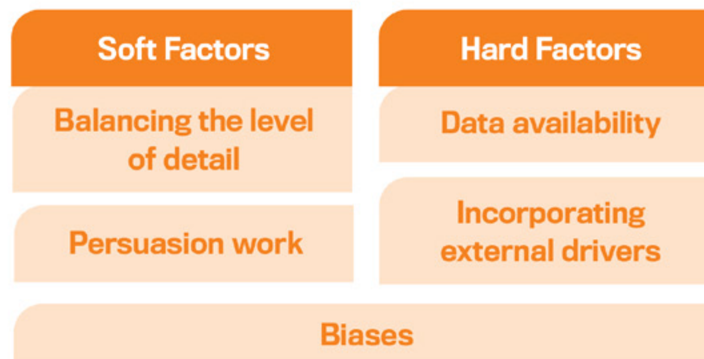
Process. To achieve a consensus on steering relevant value drivers, it's crucial to follow a comprehensive process to systematically structure the driver selection. This process should be driven and continuously further developed by an orchestrator. The orchestrator is familiar with the driver-based methodology and has the appropriate business acumen paired with financial modeling skills and soft skills required to manage stakeholders. These characteristics are tailor-made to the skill set of the contemporary management accountant. The driver-based model should be validated using statistical models and evaluated against previous planning and forecasting practices systematically. This not only makes the success of the new planning and forecasting approach measurable but also facilitates learning and trust by comparing the two approaches side by side. Let the data speak for itself.

Technology. Appropriate software and infrastructure are prerequisites for driver-based planning. Although technology isn't the primary driver behind successfully implementing driver-based planning, it's certainly a driver of failure if not appropriately managed. The pivotal characteristic of technology is its flexibility to integrate predictive modeling, human adjustments, interactive simulations, visualization interfaces, and the ability to adapt the driver logics according to prevailing business dynamics.

Issues in Driver Selection

The selection of relevant and accepted value drivers is one of the main challenges of implementing driver-based planning because managers have different interests and perspectives as their departments face different business dynamics. The driver selection process is far from straightforward, encompassing a range of soft and hard factors. Given the complex nature of driver selection, it often leads to extensive discussions and alignment meetings. The primary issues that Swarovski faced during its transition to driver-based planning exemplify the potential barriers that may surface during the driver-selection process (see Figure 3).

FIGURE 3: ISSUES IN VALUE DRIVER SELECTION



Level of detail. For management accountants as orchestrators of the implementation process, discussing the first driver tree proposal requires balancing the right level of detail in the preselection of drivers. There's a fine line between jointly developing the driver model and the risk of having to buy stakeholders into your way of thinking and losing acceptance. In addition, orchestrators must ensure that the selected value drivers are mutually exclusive and collectively exhaustive, both in the preselection and in the advanced stages of driver selection.

Persuasion work. Getting all stakeholders on board and convincing them of the value of driver-based planning is a challenging task. In particular, regional financial managers may resist top-down predictive models due to algorithm aversion and limited model explainability, which can foster resistance as they feel they're losing control over the numbers. Thus, the question remains: How can humans and machines collaborate as complements? The benefits of the

machine must be substantiated. Machines may improve forecast accuracy and reduce forecasting time, which could be allocated toward more value-adding business partnering activities.

Data availability. Even when an agreement on value driver selection can be reached swiftly, missing underlying data across the organization may pose a substantial challenge. Adequate data availability is required to ensure traceability of results, particularly when a company operates in different markets or offers a diverse range of products. Companies must ensure that all data for the respective drivers is equally available at the required granularity. Otherwise, approximations using suboptimal drivers as alternatives that undermine acceptance and trust in the driver model could be required.

External drivers. Incorporating external variables, such as GDP growth, into a driver model takes time and resources. Isolating the effect of an external driver on a KPI without overshooting the complexity of a driver model presents a challenging task. For example, for Swarovski's product categories, the yearly granularity of publicly available household panel data was insufficient. But a growing number of professional data platforms provide not only macroeconomic and financial data (e.g., Bloomberg or Refinitiv) but also market (e.g., Statista or Euromonitor), customer (e.g., Nielsen or Lotame), weather (e.g., Meteoblue), or health data (e.g., Oracle Health Sciences) for predictive analytics applications.

Biases. The selection of value drivers calls for a delicate balancing act between stakeholder mindsets and requirements, as biases inevitably emerge during the decision-making process. It's crucial to acknowledge that managerial decision making isn't always rational. For instance, stakeholders often introduce an excessive number of drivers in their pursuit of comprehensive and seemingly accurate results. This was evident in the case of Swarovski, where numerous factors such as store relocations, temporary closures, the annualization rate of opening effects, and other drivers were initially considered, in addition to the distribution sub-drivers illustrated in Figure 1. Such extensive lists of drivers can quickly become unmanageable and dilute the effectiveness of the decision-making process. To address this issue, it's beneficial to prioritize key drivers and limit the time allocated to theoretical discussions. Instead, a greater emphasis should be placed on the implementation of prototypes. This approach not only streamlines the decision-making process, but also enhances the quality of discussions by providing tangible outcomes for review and consideration.

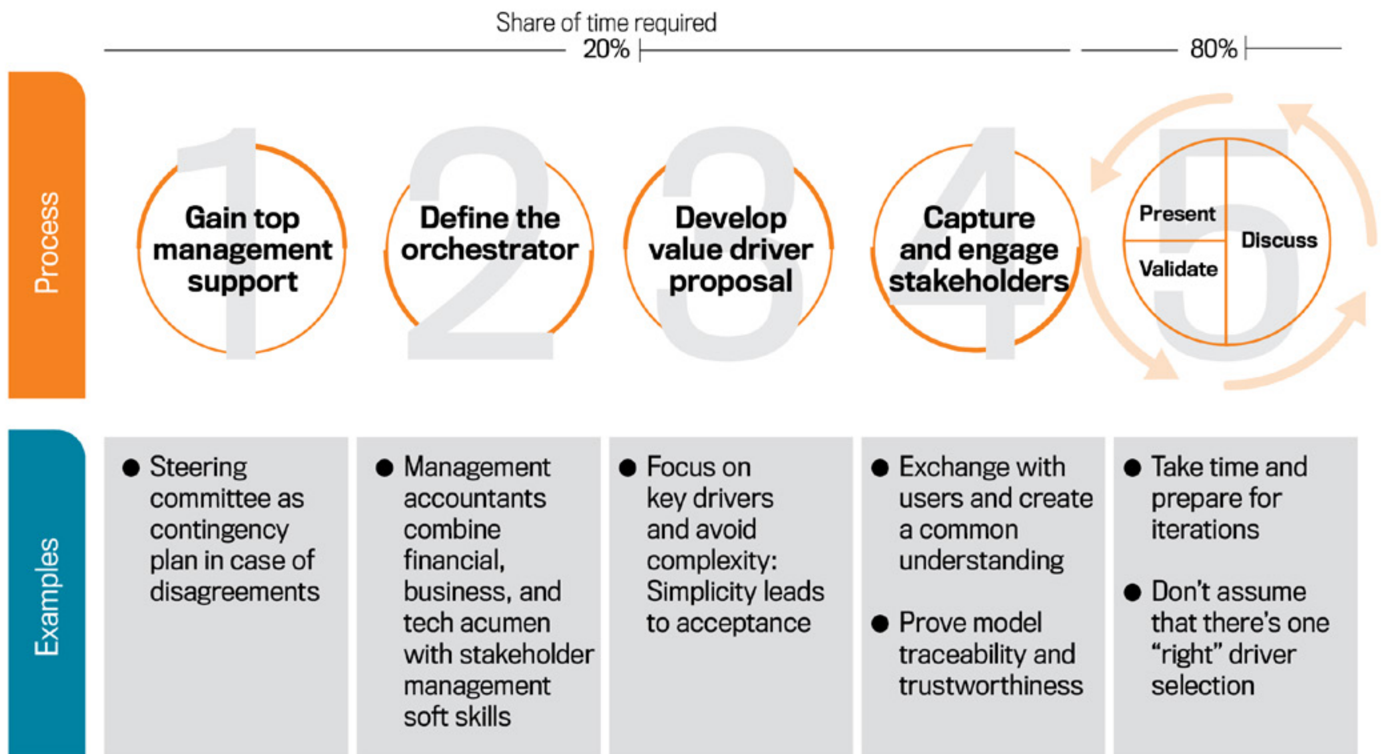
How to Master the Driver Selection Process

Driver selection isn't a straightforward process but an iterative procedure involving all stakeholders (e.g., top management, finance, and sales departments at various levels). Developing the first value driver proposal and involving all stakeholders can take approximately 20% of the time, while the remaining 80% is devoted to discussions on driver selection. In other words, 20% is groundwork and 80% is alignment work. Based on the Swarovski case, we developed the following structured process as a blueprint to master value driver selection (see Figure 4).

1. Gain top management support. Top management support is the cornerstone in the initiation of the driver selection process. The support from top management acts as the catalyst, setting in motion the driver selection journey. Without this essential backing, the subsequent process steps are at risk, due to a lack of user acceptance. Furthermore, top management's role extends beyond mere support; it may also function as a steering committee, having the decisive vote in case of unresolved disagreements along the driver selection process. The influence of top management is multifaceted, underpinning the entire process and ensuring its smooth progression.

2. Define the orchestrator. Additionally, the driver selection process needs an orchestrator to take leadership. Finance departments, especially management accountants, serve as highly suitable orchestrators. On the one hand, they have the necessary financial, business, and stakeholder management skills to draft initial driver model proposals since they're involved in planning and business partnering. On the other hand, they have the financial modeling skills, technology acumen, and data access to support an analytically driven planning transformation.

FIGURE 4: PROCESS CYCLE FOR VALUE DRIVER SELECTION



Taking the net sales driver tree at Swarovski as an example (see Figure 1), the sales and marketing departments play an essential role in net sales planning alongside the regional management accountants responsible for the operative planning of stores. The orchestrator thereby coordinates the departments, which influence the net sales through their business activities, to reach a mutual agreement on relevant drivers.

3. Develop a value driver proposal. Driver selection doesn't necessarily need to start from scratch. As illustrated by the Swarovski case, the transformation toward driver-based planning was preceded by a strategic realignment and an organizational restructuring, which included the creation of a long-term financial plan. This provided an opportunity to leverage the existing corporate knowledge and identify the key drivers through workshops with internal process experts. For the draft of the first value driver proposal, it's recommended to focus on key drivers only and add complexity to the proposal only over time, as simplicity leads to acceptance. For example, for a net sales driver tree, work your way up from the fundamental logic that sales are driven by price and quantity. Avoid incorporating external drivers in the early stages to reduce complexity and maintain an understanding of all stakeholders involved.

4. Capture and engage stakeholders. The finance department can't manage driver selection independently but must involve affected stakeholders. Relevant stakeholders that must be brought on board need to be clarified early. Bring all stakeholders into one room to create a common understanding of the purpose and setup of driver-based planning and each other's requirements. Having stakeholders on board early on will most likely increase their acceptance of the driver-based planning system as they turn from affected stakeholders to involved participants. This step is important, as stakeholders might possess tacit knowledge or market understanding crucial for crafting a driver model proposal and evaluating the drivers. While these expert opinions form a robust foundation, they alone are insufficient for driver selection. This is particularly true when considering external drivers beyond the company's control. For instance, Swarovski employed statistical models to assess the impact of GDP on net sales,

thereby validating qualitative driver selection hypotheses and increasing trust in the model.

5. Present, discuss, and validate. The driver selection process requires several meetings with all stakeholders. This phase primarily encompasses discussions and consensus building on the identification, definition, and future application of value drivers. These discussions are driven by the pivotal question of the most significant business decisions pertinent to each stakeholder. It's essential to understand that this step is highly iterative, requiring substantial time and resources for the preparation and execution of multiple workshops and follow-ups. This process step often involves the creation of prototypes, such as Excel models, between workshops to assess the viability and potential improvements of workshop ideas, considering practical constraints like data availability. Using proposals on spreadsheets or slides as a basis for discussion fosters agility over perfection in favor of multiple iterations. It's also important to remember that there's no single correct solution to driver selection. Therefore, preparing for iterations and allocating sufficient time is key to finding a solution that's understood and accepted by all stakeholders.

Driver-based planning and forecasting offers an agile and analytical approach for navigating the complexities of the business environment. By selecting relevant and accepted value drivers, companies can make informed decisions and timely adapt their actions to reach their corporate goals in a VUCA environment. The insights from this article can help to guide practitioners in implementing driver-based planning and improving their financial planning systems.

The journey toward driver-based planning and forecasting can be a challenging one, as demonstrated by the case of Swarovski. The company found that a purely top-down, quantitatively driven approach to value driver selection, devoid of stakeholder involvement, hindered the acceptance of the new planning methodology. A series of iterative discussions aimed at building consensus, understanding, and acceptance proved pivotal to their successful implementation of driver-based planning and forecasting.

The role of the finance organization, and especially management accountants with their comprehensive skill set, was crucial to orchestrate the driver selection process. Simplicity emerged as a key factor in the acceptance of a driver model. Swarovski constantly balanced complexity and explainability of its net sales driver model to find an optimal trade-off that met the requirements of the organization.

The case of Swarovski underscores the importance of a structured, stakeholder-inclusive approach to value driver selection, underpinned by top management support and a careful balance between complexity and simplicity. Value driver selection isn't a purely analytical task—especially in the iterative alignment process, soft skills are key to getting all stakeholders on board.

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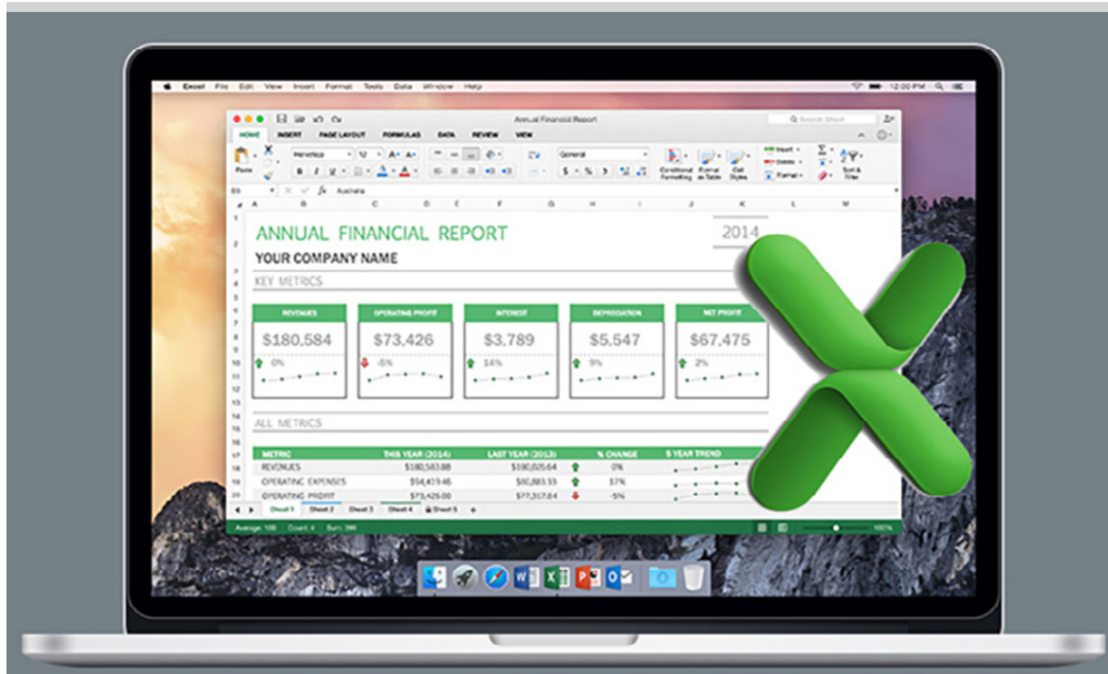
STRATEGIC FINANCE



Microsoft Debuts GROUPBY and PIVOTBY Functions

Microsoft introduces two new functions that allow a formula to generate a summary that looks like a pivot table.

By Bill Jelen

In November 2023, Microsoft began rolling out two powerful new functions that allow you to create a report similar to a pivot table using a formula. The rollout started with the Microsoft Insiders Beta channel and will continue rolling out over the upcoming months.

Both functions start with a simple version that requires as few as three arguments. However, more optional arguments are available in order to control sorting and subtotals.

The GROUPBY function uses this syntax: =groupby(row_fields, values,function, [field_headers],[total_depth],[sort_order],[filter_array])

Simple Use of GROUPBY

In Figure 1, the GROUPBY function returns the array shown in F6:G9. The formula specifies that the function should group by the categories in column A and Sum the sales from column C.

F6 =GROUPBY(A4:A21,C4:C21,SUM)

	A	B	C	D	E	F	G	H
4	**Category**	**Product**	**Sales**	**Cost**				
5	Fruit	Apple	1275	689				
6	Vegetables	Asparagus	4864	2335		Fruit	42056	
7	Fruit	Banana	3809	1828		Herbs	32371	
8	Herbs	Basil	8088	3640		Vegetables	104184	
9	Vegetables	Broccoli	3943	2090		Total	178611	
10	Vegetables	Cabbage	2653	1353				
11	Fruit	Cherry	9936	5365				
12	Herbs	Cilantro	3967	2142				
13	Fruit	Dill	9855	5223				
14	Fruit	Elderberry	2768	1439				
15	Vegetables	Endive	7164	3725				
16	Herbs	Fennel	9514	4376				
17	Fruit	Fig	9028	4965				
18	Fruit	Guava	5385	2854				
19	Herbs	Oregano	7262	3341				
20	Herbs	Parsley	3540	1628				
21	Vegetables	Peppers	85560	39360				

Figure 1

Note that, by default, the function provides one grand total row and no headings. You can override both of these defaults using the total_depth and field_headers arguments as shown later.

People familiar with legacy functions such as SUBTOTAL and AGGREGATE might be surprised that the Excel team abandoned the traditional 11 numbers used to specify that calculation option. For example, you frequently see the =SUBTOTAL(9 to specify a Sum or =SUBTOTAL(3, for a Count. Although those 11 codes for function number were well established in Excel, Microsoft wanted to make GROUPBY and PIVOTBY to be even more flexible than the legacy functions.

Currently, these functions are built in: Sum, Average, PercentOf, Median, Count, CountA, Max, Min, Product, ArrayToText, Concat, StDev.S, StDev.P, Var.S, Var.P, and Mode.Sngl. However, you're actually allowed to write any possible LAMBDA function and use that LAMBDA function as the function argument. In fact, Microsoft is treating the word SUM as a shortcut for LAMBDA(x,SUM(x)).

Using GROUPBY with Two Fields

In this example, both Category and Product are used as the row fields. Further, the Values include both Sales and Cost. Excel automatically builds a unique list of categories and products, sorts them, and provides totals for each combination with a grand total at the top. Note the addition of an extra argument: 3 is used for the field_headers argument to add headers at the top of the result.

Specifying Subtotals and Sort Order

The next two optional arguments are total_depth and sort_order. Excel provides a single grand total at the bottom of the results as the default. Your choices for this field are: No Total, Grand Total at Bottom, Grand Total at Top, Grand Total and Subtotals, or Grand Total and Subtotals at the top.

In the previous example, the rows were arranged alphabetically. You can override this using the sort_order argument. Let's say that you want to sort ascending by the sales column. You would use 3 as the sort_order because Sales is the third column. What if you want those sales arranged in descending order? Specify a negative 3. The minus sign is an easy way to specify that the sort order is descending.

Look carefully at Figure 3. I've specified that the sort order is based on column 3 descending. The Vegetables group is at the top because it has the largest sales. Within the Vegetables group, the Peppers are at the top because they have the largest sales within the category.

F6 | fx | =GROUPBY(A4:B21,C4:D21,SUM,3)

	A	B	C	D	E	F	G	H	I
4	**Category**	**Product**	**Sales**	**Cost**					
5	Fruit	Apple	1275	689					
6	Vegetables	Asparagus	4864	2335		Category	Product	Sales	Cost
7	Fruit	Banana	3809	1828		Fruit	Apple	1275	689
8	Herbs	Basil	8088	3640		Fruit	Banana	3809	1828
9	Vegetables	Broccoli	3943	2090		Fruit	Cherry	9936	5365
10	Vegetables	Cabbage	2653	1353		Fruit	Dill	9855	5223
11	Fruit	Cherry	9936	5365		Fruit	Elderberry	2768	1439
12	Herbs	Cilantro	3967	2142		Fruit	Fig	9028	4965
13	Fruit	Dill	9855	5223		Fruit	Guava	5385	2854
14	Fruit	Elderberry	2768	1439		Herbs	Basil	8088	3640
15	Vegetables	Endive	7164	3725		Herbs	Cilantro	3967	2142
16	Herbs	Fennel	9514	4376		Herbs	Fennel	9514	4376
17	Fruit	Fig	9028	4965		Herbs	Oregano	7262	3341
18	Fruit	Guava	5385	2854		Herbs	Parsley	3540	1628
19	Herbs	Oregano	7262	3341		Vegetables	Asparagus	4864	2335
20	Herbs	Parsley	3540	1628		Vegetables	Broccoli	3943	2090
21	Vegetables	Peppers	85560	39360		Vegetables	Cabbage	2653	1353
22						Vegetables	Endive	7164	3725
23						Vegetables	Peppers	85560	39360
24						Total		178611	86353
25									

Figure 2

F6 | fx | =GROUPBY(A4:B21,C4:D21,SUM,3,2,-3)

	A	B	C	D	E	F	G	H	I
4	**Category**	**Product**	**Sales**	**Cost**					
5	Fruit	Apple	1275	689					
6	Vegetables	Asparagus	4864	2335		Category	Product	Sales	Cost
7	Fruit	Banana	3809	1828		Vegetables	Peppers	85560	39360
8	Herbs	Basil	8088	3640		Vegetables	Endive	7164	3725
9	Vegetables	Broccoli	3943	2090		Vegetables	Asparagus	4864	2335
10	Vegetables	Cabbage	2653	1353		Vegetables	Broccoli	3943	2090
11	Fruit	Cherry	9936	5365		Vegetables	Cabbage	2653	1353
12	Herbs	Cilantro	3967	2142		Vegetables		104184	48863
13	Fruit	Dill	9855	5223		Fruit	Cherry	9936	5365
14	Fruit	Elderberry	2768	1439		Fruit	Dill	9855	5223
15	Vegetables	Endive	7164	3725		Fruit	Fig	9028	4965
16	Herbs	Fennel	9514	4376		Fruit	Guava	5385	2854
17	Fruit	Fig	9028	4965		Fruit	Banana	3809	1828
18	Fruit	Guava	5385	2854		Fruit	Elderberry	2768	1439
19	Herbs	Oregano	7262	3341		Fruit	Apple	1275	689
20	Herbs	Parsley	3540	1628		Fruit		42056	22363
21	Vegetables	Peppers	85560	39360		Herbs	Fennel	9514	4376
22						Herbs	Basil	8088	3640
23						Herbs	Oregano	7262	3341
24						Herbs	Cilantro	3967	2142
25						Herbs	Parsley	3540	1628
26						Herbs		32371	15127
27						Grand Total		178611	86353
28									

Figure 3

Filtering Out Records

The final argument is the filter_array. You can use this to remove items from the original data. Say that you wanted to remove Herbs from the report. Adding A4:A21<>"Herbs" as the final argument produces the report shown in Figure 4.

Also in Figure 4, I changed the total_depth from 2 to -2. This tells Excel to put the totals and subtotals at the top of each group.

F6 =GROUPBY(A4:B21,C4:D21,SUM,3,2,-3,A4:A21<>"Herbs")

	A	B	C	D	E	F	G	H	I
4	**Category**	**Product**	**Sales**	**Cost**					
5	Fruit	Apple	1275	689					
6	Vegetables	Asparagus	4864	2335		Category	Product	Sales	Cost
7	Fruit	Banana	3809	1828		Vegetables	Peppers	85560	39360
8	Herbs	Basil	8088	3640		Vegetables	Endive	7164	3725
9	Vegetables	Broccoli	3943	2090		Vegetables	Asparagus	4864	2335
10	Vegetables	Cabbage	2653	1353		Vegetables	Broccoli	3943	2090
11	Fruit	Cherry	9936	5365		Vegetables	Cabbage	2653	1353
12	Herbs	Cilantro	3967	2142		Vegetables		104184	48863
13	Fruit	Dill	9855	5223		Fruit	Cherry	9936	5365
14	Fruit	Elderberry	2768	1439		Fruit	Dill	9855	5223
15	Vegetables	Endive	7164	3725		Fruit	Fig	9028	4965
16	Herbs	Fennel	9514	4376		Fruit	Guava	5385	2854
17	Fruit	Fig	9028	4965		Fruit	Banana	3809	1828
18	Fruit	Guava	5385	2854		Fruit	Elderberry	2768	1439
19	Herbs	Oregano	7262	3341		Fruit	Apple	1275	689
20	Herbs	Parsley	3540	1628		Fruit		42056	22363
21	Vegetables	Peppers	85560	39360		Grand Total		146240	71226

Figure 4

Adding Column Fields with PIVOTBY

If you want to have column fields across the top of your report, switch over to the PIVOTBY function. It uses this syntax:

=PIVOTBY(row_fields, col_fields,
values, function,
[field_headers], [row_total_depth],
[row_sort_order],[col_total_depth],
[col_sort_order],[filter_array])

Figure 5 shows a simple report with regions across the top and categories down the first column. All of the various options shown from GROUPBY also apply to PIVOTBY, with extra complexity for column sort order and column totals.

H5 =PIVOTBY(C3:C37,A3:A37,E3:E37,SUM,3)

	A	B	C	D	E	F	G	H	I	J	K
3	Region	Rep	Category	Product	Sales	Cost					
4	East	Ed	Fruit	Apple	1275	638					
5	West	Flo	Fruit	Apple	1782	820			Region		
6	East	Ed	Vegetables	Asparagus	4864	2189		Category	East	West	Total
7	West	Hank	Vegetables	Asparagus	3158	1547		Fruit	42056	24351	66407
8	East	Andy	Fruit	Banana	3809	2095		Herbs	32371	15982	48353
9	West	Hank	Fruit	Banana	3627	1668		Vegetables	27180	11199	38379
10	East	Ed	Herbs	Basil	8088	4044		Total	101607	51532	153139
11	West	Hank	Herbs	Basil	4618	2401					

Figure 5

Bill Jelen is the host of MrExcel.com and the author of 67 books about Excel. He helped create IMA's Excel courses on data analytics and the IMA Excel 365: Tips in Ten series of microlearning courses. Send questions for future articles to IMA@MrExcel.com.

STRATEGIC FINANCE

Shore Up Your Cybersecurity

The Cybersecurity and Infrastructure Security Agency provides resources for organizations to enhance their resilience.

By Jim Tadewald, CMA, CFM, CIA, CRISC, CFE

The Cybersecurity and Infrastructure Security Agency (CISA) works to improve the overall cybersecurity posture of the United States by providing cybersecurity guidance, sharing threat intelligence, and responding to cyber incidents. CISA also engages with private sector organizations, state and local governments, and other federal agencies to build a collaborative network for sharing cybersecurity information, best practices, and coordinated responses to cyber threats.

As part of its mission to protect and secure critical infrastructure from cyber threats, CISA provides resources and assessment tools to small, medium, and large organizations. These cybersecurity resources can help your organization develop its cybersecurity risk and control profile, regardless of the level of cybersecurity maturity and size of your organization.

Cybersecurity Resources

Speakers on cybersecurity. CISA's cybersecurity advisors can provide stakeholders with webinars, in-person presentations/keynotes, or panel discussions on cybersecurity and resiliency for your organization or group.

Cross-Sector Cyber Performance Goals (CPG) assessment. The CPG is a voluntary self-assessment that's intended to be a baseline set of cybersecurity practices broadly applicable across critical infrastructure with known risk-reduction value. The CPG can be used as a benchmark for critical infrastructure operators to measure and improve their cybersecurity maturity.

The CPG includes a combination of recommended practices for information technology (IT) and operational technology (OT) owners, including a prioritized set of security practices. The CPG is unique from other control frameworks as it considers not only practices that address risk to individual entities, but also the aggregate risk to the nation.

Cyber Security Evaluation Tool (CSET). CSET is a desktop software tool that guides organizations through a step-by-step self-evaluation for their industrial control system and IT network security practices. Users can evaluate their own cybersecurity stance using many recognized government and industry standards and recommendations, such as the voluntary CPG.

Ransomware Readiness Assessment (RRA). Ransomware poses an increasing threat and continues to rise as a top cyber threat impacting both businesses and government agencies. To understand your cybersecurity posture and assess how well your organization is equipped to defend and recover from a ransomware incident, CISA offers the RRA.

Cyber Resilience Review (CRR). The CRR is derived from the CERT Resilience Management Model, a process improvement model developed by Carnegie Mellon University's Software Engineering Institute for managing operational resilience. The CRR is based on the premise that an organization deploys its assets (people, information, technology, and facilities) to support specific critical services or products. Based on this principle, the CRR evaluates the maturity of your organization's capacities and capabilities in performing, planning, managing, measuring, and defining cybersecurity capabilities across 10 domains. For more information, email iodregionaloperations@cisa.dhs.gov.

External Dependency Management (EDM) assessment. The EDM assessment is conducted as a four-hour session at a location of your choosing, and your organization can use the assessment by itself or as the first step in an improvement effort. You also may use it in conjunction with CISA's External Dependencies Management Method, which provides a rigorous, repeatable way to identify and manage specific suppliers or other external entities that your organization depends on to support its mission.

Cyber Infrastructure Survey (CIS). The goal is to assess the foundational and essential cybersecurity practices of an organization's critical service to identify dependencies, capabilities, and emerging effects of the current cybersecurity posture. After the survey, the Department of Homeland Security (DHS) will provide an interactive dashboard for scenario planning.

Cyber Incident Response Tabletop Exercise. CISA consults and plans with a range of government and private sector stakeholders to develop and conduct preparedness exercises for a variety of resilience disciplines, including cybersecurity and physical security. For more information or to request an exercise, contact cisa.exercises@cisa.dhs.gov.

CISA Tabletop Exercise Packages (CTEPs). CTEPs are a comprehensive set of resources designed to assist stakeholders in conducting their own exercises. Partners can use CTEPs to initiate

What Is CISA?

CISA is a U.S. government agency responsible for enhancing the cybersecurity and resilience of the nation's critical infrastructure. CISA was established on November 16, 2018, as part of the DHS through the Cybersecurity and Infrastructure Security Agency Act of 2018.

discussions within their organizations about their ability to address a variety of threat scenarios. More than 100 CTEPs are available to meet stakeholders' specific exercise needs.

Vulnerability Scanning Service. CISA's vulnerability scanning service continuously scans your publicly accessible IT systems for vulnerabilities and provides you with weekly reports and ad hoc alerts for newly detected vulnerabilities. Additional information about the service is available at Cyber Hygiene Services.

Web Application Scanning (WAS). WAS is "internet scanning-as-a-service" and part of CISA's service offerings. WAS service assesses the health of your publicly accessible web applications by checking for known vulnerabilities, bugs, and weak configurations. Additionally, WAS service can recommend ways to enhance security in accordance with industry and government best practices and standards. Note: Stakeholders must be enrolled in CISA's Vulnerability Scanning Service to be eligible for the WAS service. Contact vulnerability@cis.dhs.gov to get started.

The resources listed are current as of October 2023. Some of the resources may only be available to U.S. companies, while other information provided is obtainable for all. Additional guidance can be obtained from CISA for areas of interest. This includes any legal limitations regarding the use of these resources.

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