BI & DATA TRENDS 2022

Interwoven: The End of Competition as We Know It

SME

In the new market dynamics, no business succeeds by going it alone.

Strength lies in sharing resources to innovate and build resilience.

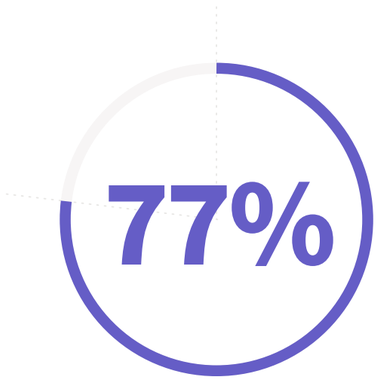
The pandemic. Climate change. Economic inequity. Today, our biggest societal issues are systemic. And with cause and effect so globally interwoven, the solutions have to be collective, too. The hoarding of information and resources only hinders innovation, slows resolution, and erodes trust.

Our commercial challenges are also systemic. External forces have a much bigger impact than they used to, and supply chains have been fundamentally disrupted. Digital giants like Google and Amazon have built massive networks of data collection which they're using to dominate, replacing entire markets with a few powerful supply chains that cut across industries.[1] At the same time, digital startups are disrupting from underneath, though they struggle to reach scale.

To stay competitive, there is a growing imperative for tighter integration with stakeholders. As a result, corporate venture capital (CVC) is on the rise[2]: Established companies are investing in their own startups, tapping into their flow of innovation while keeping them flush with resources.

In this environment, digital transformation isn't enough: You need digital innovation, where data is the product or service. Accordingly, last year's digital switch has unlocked a lot of possibilities. Software is hot; data and analytics are hottest. But while software is infinitely scalable, talent is finite. A recent IDC survey revealed that in much of the world (Europe, the Middle East, and Africa), "finding talented and skilled employees" is the most significant obstacle to achieving business goals.[3] That means you no longer have the luxury to innovate only inside your organization. You need to innovate outside of it, too – in collaboration with your partners and ecosystem.

IT SPENDING IS UP. WAY UP.



of CIOs are now in the process of reaching the "next normal." [4]

To take a leadership position, you have to become interwoven.

Build a collaborative value chain that can resist being disrupted.

In today's business landscape, longstanding boundaries are blurring. A competitor can become a partner, a partner can become a customer, and a customer can become a competitor. The solution is not to wall off but to lean in to a new form of competitive edge: generative relationships with mutually beneficial outcomes.

PUT ANOTHER WAY:

Advantage is shifting to data becoming the product and service, and you can't go it alone.

Your only option is to become more "interwoven," creating a trusted ecosystem built on clear rules of engagement. This will generate joint data, insights, and innovation that wouldn't be possible independently. Together with your collaborators, you can weave a strong and resilient "rope," or value chain, and take a leadership position. This approach has advantages even against the giants in your space.

And there's more good news: It's much easier to become interwoven than it used to be. The API economy has changed everything, making the build-or-buy decision much less relevant. Now that it's easy to make all the component parts talk to each other, your task is to assemble, orchestrate, and interweave data, intelligence, processes, and people. Trust and agility are the requirements, the mutually generated data and insights are the currency, and successful outcomes are the reward.

We saw it happen on the world stage with the development of COVID vaccines, when pharmaceutical companies partnered with academic institutions to accelerate development. We saw it when individual investors banded together to topple the hedge funds in their shorting of GameStop. And we see it in open source intelligence communities,[5] where academics, activists, journalists, and data scientists are collaborating for the greater good.

This interwoven approach is the catalyst for accelerated digital innovation – and it's your way forward in an interconnected world.

Interwoven:

10 data trends that change competition as we know it.

01 Collaboration-mining arrives.

02 The dashboard is dead. Long live the dashboard.

03 Data lineage provides explainable BI.

04 Insight velocity brings cost into focus.

05 Distributed clouds become the norm.

06 Embedded insights become pervasive.

07 Application automation triggers action.

08 Data science overlapping with analytics upskills everyone.

09 Security becomes a top priority.

10 Data Mesh becomes the new fabric for distributed data.

1 Collaboration-mining arrives.

The pandemic rendered collaboration and BI inseparable. The massive shift to work-from-home made it imperative to quickly embed BI within workstreams and productivity apps like Teams, Slack, and Zoom. And once we were no longer bounded by physical space, opportunities opened up for more collaboration with outside stakeholders.

But collaboration at the end of the chain, after insights are found, is only one piece of the puzzle. Collaboration has to begin earlier, as derivative data gets generated and amid exploring, discussing, and arriving at insights that can be immediately actioned. Nothing de-siloes data like collaboration.

As collaboration spreads across the analytics workflow, we'll increasingly be able to look at its mechanics, striving to improve the way we come together around data, networks, and processes. In other words, just as we've learned to mine data and processes, we'll see the advent of "collaboration mining." This will enable decisions to be tracked, providing crucial auditability and boosting trust with multiple stakeholders. And we'll say goodbye to erasing the white board when everyone leaves the conference room.

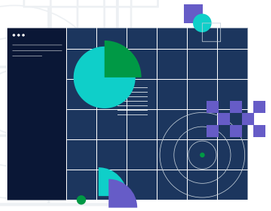
COMPELLING EVENT

Nearly 4 out of 5 CEOs believe that remote collaboration will be an enduring shift after the COVID-19 pandemic.[6]

ANALYST PREDICTION

By 2023, 30% of organizations will harness the collective intelligence of their analytics communities, outperforming competitors that rely solely on centralized analytics or self-service.[7]

Gartner®



COMPELLING EVENT

According to IDC, only 33% of executives are comfortable questioning the KPIs and metrics used in their organizations.[8]

ANALYST PREDICTION

By 2025, augmented consumerization functionality will drive adoption of analytics and business intelligence capabilities beyond 50% for the first time, influencing more business processes and decisions.[9]

Gartner

2 The dashboard is dead. Long live the dashboard.

We hear a lot these days about the end of the dashboard. After all, displaying KPIs and visualizing data is something everyone can do, right? It is true that monitoring a cockpit of static visualizations won't differentiate you in today's market. But there's a big difference between simple KPI monitoring and deep investigatory analysis supported by a rich, interactive, augmented analytics application.

Uncovering discoveries that inform direction is more important than ever. So how is the dashboard evolving? For one thing, KPIs are moving from lagging to leading, with key driver analysis. It's becoming both highly contextualized and highly collaborative. Contextualization comes from the ability to create sophisticated alerts for instant insight when data changes. And it comes from AI, which helps associate the data with context, determining where to focus attention at any given moment.

On the collaborative end, the dashboard is evolving into an analytic hub that catalogues insights and distributed data – a place where machine, process, and collaborative intelligence can coexist. This will interweave information producers and consumers, along with folding in external stakeholders when appropriate.

3

Data lineage provides explainable BI.

For years, analytics consumers have struggled to explain the data behind a metric, KPI, or calculation. And this problem has only been exacerbated as data has become more distributed and fragmented, not just within the organization but outside it, too. It hasn't happened (and it never will), but as a thought experiment: Imagine if all the data were together in one place. We'd still never have a single version of the truth – because data changes in nanoseconds and because there are constantly new variables that need to be accounted for.

Today, as more distributed data architectures emerge (see Trend #10), a critical component is data observability through augmented data management with data lineage, impact analysis, and governance. In an intertwined world with multiple versions of the truth, lineage will be mission-critical to triangulate data, providing trust and "explainability." It will also help interweave analytics across multiple data sources and hyperscale platforms.

When users have visibility into where the data comes from and where in the lifecycle it is – right from within the analytics workflow – they gain the confidence and trust to act on the insights the data drives.

COMPELLING EVENT

In a BARC survey of 2259 BI practitioners, the most commonly identified reason for business intelligence problems was poor data quality. Master data/data quality was (again) rated as the most important trend.[10]

ANALYST PREDICTION

By 2023, organizations with shared ontology, semantics, governance and stewardship processes to enable interenterprise data-sharing will outperform those that don't.[11]

Gartner

COMPELLING EVENT

2020 and 2021 saw a massive increase in the adoption of cloud data warehouses and data lakes.

ANALYST PREDICTION

By 2023, 50% of clients of public cloud services will experience escalating costs and project failures resulting from poor management.[12]

Gartner

4 Insight velocity brings cost into focus.

As cloud data warehouses and lakes have been modernized and broadly adopted, they've opened the opportunity to live-query huge amounts of data directly, adding another powerful tool for discovery. But when you use this technique, you can end up with runaway cloud compute costs. And performance is a concern, too.

Rather than using live-query exclusively, you need a data management and analytics approach based on your frequency and latency requirements. A "heat map" of typical queries could show that the majority of your questions are exploratory; without the need for real-time updates, they can run in-memory. On the other hand, your more coordinated queries may need to hit compute at the data-source level.

On the data integration side, you should be able to choose between continuously updating and merging data (incurring higher compute costs) and doing an aggregate view (with lower costs). And from an analytics perspective, you should be able to choose between live-query (higher compute costs) and in-memory exploration, which can be both faster and cheaper. If you want to become truly data-driven, both insight velocity and cost-per-insight will increase, and you'll have to figure out how to run the right queries in the right place.

5 Distributed clouds become the norm.

The data landscape will continue to be messy and hybrid for the foreseeable future. According to 451 Research,[13] most organizations no longer look for a single, all-encompassing solution to their IT needs but rather an IT estate that accommodates the cost, performance, and governance requirements of different workloads.

Specialized workloads exist for a reason. Processing can be faster at the edge. Compliance is critical. And security is more important than ever. China's new data privacy law will be one of the strictest in the world. In Europe, the massive GAIA-X project is developing the foundations for a federated, open data infrastructure, aiming to connect centralized and decentralized infrastructures in a homogeneous, user-friendly system.

Distributed and hybrid clouds will increasingly require the following: 1) that your hardware can sit locally; 2) that you can address discrepancies in the cloud value chain with harmonized manageability and user interfaces; and 3) if done right, that you can implement multiple cloud hyperscalers, reducing dependence on vendor stack. A distributed cloud infrastructure strengthens your ability to both access and share interwoven data securely and confidently.

COMPELLING EVENT

According to 451 Research, 48% of data center co-location users transitioned a workload or application away from the hyperscale public cloud providers (e.g., Amazon Web Services, Microsoft Azure, Google Cloud Platform) to some other venue in the past 12 months.[14]

ANALYST PREDICTION

By 2025, 50% of large enterprises will enable transformational business models using "distributed cloud" services at a location of their choice.[15]

Gartner

COMPELLING EVENT

A new Gartner survey reveals that half of business technologists now produce technology capabilities for users beyond their own department.[16]

ANALYST PREDICTION

By 2022, more than one half of line-of-business personnel will have immediate access to cross-functional analytics embedded in their activities and processes, helping to make operational decision-making more efficient and effective.[17]

Ventana Research

6 Embedded insights become pervasive.

To build a collaborative, outside-in approach to innovation, you need to open up your analytics to your partners, customers, and broader ecosystem. And everyone should benefit, including the customer of your customer.

When value chains get interwoven with multiple providers and users in the mix, data and analytics should reflect that. For one, they need to be served up at every link in the chain. For another, embedded analytics must be reimagined as embedded insights. Embedding analytics has often meant inserting a dashboard into a workflow or a non-analytic application. That's useful, sure, but it only scratches the surface of what's possible. You can and should embed alerts to micro-insights that may or may not lead to a decision.

Insights need to be like vapor, existing everywhere around every user and business process. When contextualized micro-insights are more pervasive, it will increase trust in the system.

7 Application automation triggers action.

The API economy opens up entirely new ways for businesses, partners, customers, and even competitors in a coopetitive world to interweave in joint initiatives. It makes the buy-versus-build decision less relevant, instead presenting the opportunity to assemble and orchestrate. And application automation is a strongly emerging area that removes the need to code these integrations, making the opportunity much more accessible to a wider variety of actors.

Not only should applications in an ecosystem talk to each other, alerting and notifying users with in-the-moment insights, but you should also be able to set up actions triggered directly by data-driven milestones in the workflow, with or without human involvement. So you never miss the opportunity in a fleeting business moment.

The ease of application automation creates a feedback loop with other trends. For example, it's now easier to add low-code AI and machine learning (ML) to augment data analytics pipelines.

COMPELLING EVENT

The average number of SaaS applications used by organizations jumped to 110 in 2021, a 38% increase over the previous year.[18]

ANALYST PREDICTION

By 2023, 60% of organizations will compose components from three or more analytics solutions to build decision-oriented applications infused with analytics that connect insights to actions.[19]

Gartner

COMPELLING EVENT

Analytics and BI platforms increasingly include functionality to perform augmented data science and machine learning tasks.

ANALYST PREDICTION

By 2025, a scarcity of data scientists will no longer hinder the adoption of data science and machine learning in organizations.[20]

Gartner

8 Data science overlapping with analytics upskills everyone.

Analytics should be reaching broader groups. In a world where data is widely available and business users can create their own applications, data literacy continues to be critical as a foundation. And today's user-friendly technology, augmented by AI and low-code, is enabling everyone to take a step up without needing to program.

Data science, on the other hand, has been seen as something only the few can do. But what if common predictive use cases – like key driver analysis, what-if scenarios, and on-demand predictions via APIs – become more accessible for regular analytics consumers? And what if they include explainability and governance for both the models and the data? Data science, overlapping with analytics, will paradoxically enable more people to do more.

If everyone can take a step up, data science teams will diverge. On one end, what's been done in the labs will be able to scale – and will need the same governance and operationalization as regular data and analytics. On the other, the most advanced data scientists will focus more on ML, which requires software development, coding, and MLOps. For this group, interoperability among analytic platforms and specialist workbenches – or just Jupiter notebooks – will be key.

9

Security becomes a top priority.

In 2020, in response to the pandemic, we saw an urgent shift to SaaS and various emerging technologies. In 2021, security and compliance teams had to play catch-up to this rapid “digital switch” – or face serious consequences. In Sweden, a major grocery chain had to close 500 stores for a full week after a ransomware attack on its American software supplier. And when Amazon violated data protection laws, they were handed a record $887M fine.[21]

It’s no coincidence that security just moved to a top investment intention for CIOs in Gartner’s annual survey.[22] Regulations are now conflating data management, data privacy, data security, and identity and access management. And the more you embed analytics, trigger actions, and share APIs and data, the more you need to protect against failures. So does that slow things down? Not necessarily. New methods are coming onto the scene, enabling more interoperability in a trusted way. And as you interweave your processes and products securely with partners in joint value chains, protections shift from nice-to-haves, to musts, to business opportunities.

COMPELLING EVENT

The emergence of open standards like Solid provides the ability to store data in a way that promotes secure interoperability.

ANALYST PREDICTION

Through 2025, 80% of organizations seeking to scale digital business will fail because they do not take a modern approach to data and analytics governance.[23]

Gartner

COMPELLING EVENT

According to IDC, in 2021, 75% of enterprises use new, external data sources to enhance their cross-functional decision-making capabilities in ways that increase value compared with using internal data alone.[24]

ANALYST PREDICTION

By 2024, organizations that utilize active metadata to enrich and deliver a dynamic data fabric will reduce time to integrated data delivery by 50% and improve the productivity of data teams by 20%.[25]

Gartner

10 Data Mesh becomes the new fabric for distributed data.

The need for faster access to data across increasingly distributed landscapes is driving integrated data management that uses metadata, semantics, real-time and event-driven data movement, and orchestration in the pipeline. Putting these capabilities into a distributed architecture is being referred to as a "data fabric." The discussion on how to handle distributed data has evolved into "data mesh," with the principles of treating decentralized data as a product, with ownership in the domains. The tissue connecting these domains and their associated data assets is a universal interoperability layer that applies the same syntax and data standards. This can all be tied together with a catalogue – not just for data but for analytic artifacts, too.[26]

The large cloud hyperscalers will claim that they have this, taking the approach that they're effectively one big data lake. In other words: "Put it all in our platform; we can do anything you need." But that narrows your choice to one vendor, when the whole point is to accommodate for heterogeneous and decentralized data.

The key is what these new architectures enable. Having access to all the data you need, and treating it as a product, accelerates customer and supplier onboarding, improves inventory management, and much more. More widely, it establishes global consistency across your business and ecosystem. And having an architecture to handle the rapid proliferation of data – over a centralized data platform – makes both your enterprise and ecosystem (interwoven into a fabric value chain) more agile and robust.

Things are changing – fast. Get the knowledge and the power to act.

As markets are increasingly dominated by a few strong value chains, you can’t go it alone. New architectural approaches, interoperability, open platforms – with APIs – introduce unprecedented opportunities for you to forge partnerships that create interwoven value chains. The data and insights generated will become joint currency, giving you and your partners the resilience to thrive. Taking this approach requires clear rules, a common purpose, a long-term view, and a mindset shift. Are you ready to become interwoven?

ABOUT SME SOLUTIONS GROUP

Our subject matter experts' build cohesion between technology, process, organizational goals, and budgets. We work with tools that promote a data-literate world, where everyone can use data and analytics to improve decision-making and solve their most challenging problems. We provide end-to-end, real-time data integration and analytics solutions to close the gaps between data, insights, and action. A strong data foundation optimizes business performance and commercializes opportunities. SME's data first approach leads businesses to smarter, more productive analytical insights. Data is an asset that supports businesses to learn about new opportunities, hidden threats, evolving customer expectations, and staying competitive in the cutting-edge marketplace. We believe that by embracing Business Intelligence (BI) you can do more or spend less.

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