SysAid

Business Intelligence

TAKE AN INFORMED APPROACH TO ITSM

By Stephen Mann

Why do so many companies, and their IT organizations, continue to waste the business intelligence (BI) opportunity that sits atop their wealth of ITSM data?

IT organizations and IT service management (ITSM) professionals are not averse to data exploitation. They might look for incident trends, for problem management purposes, and often have a death-by-metrics approach to performance reporting – where it can take someone a week to pull together a monthly service desk reporting pack that gets very little attention or reads. But beyond the number of incidents handled and the level of first contact resolution (FCR), what could the wealth of ITSM data trapped in IT management and ITSM tools be telling the IT organization and business colleagues about the past and the future of IT service delivery?

Read this white paper to:

- Understand what BI is
- Recognize how BI can help ITSM to improve both IT and business operations
- Find out what to focus on when selecting a BI tool for ITSM
- Discover the best practice for selecting, planning, and deploying a BI tool
- Understand where the future of BI is heading

Using Business Intelligence for ITSM

So why aren't more IT organizations using BI to better understand their past and to influence their present and future?

When you stop to think about it, ITSM tools house, and hide, a great deal of IT-related data – whether it be in a configuration management database/system (CMDB/CMS), a service catalog, or within the more-transactional records for incidents, service requests, problems, and changes.

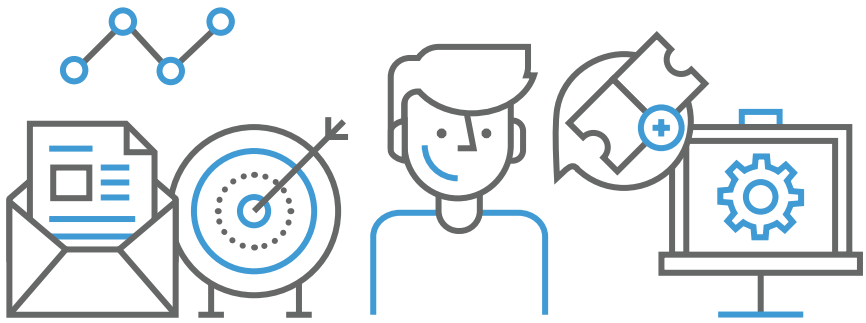
Some of this data does surface as part of commonly-seen ITSM reporting activities, usually with a focus on understanding operational KPIs and trends such as:

- Average incident resolution times, by incident type or category (and similarly for service requests)
- The number of incidents received, resolved, and still open (and similarly for service requests)
- Whether service level targets have been met

It's handy, and potentially important, information to know but it's only skimming the surface of the data that's hidden away in IT management and ITSM tools.

So what's stopping the ITSM data exploitation opportunity? And what should ITSM professionals be doing with BI?

First, however, it's best to be on the same page re what BI is and how it can help IT organizations to improve IT support and service delivery.



What Is BI?

Business intelligence, commonly abbreviated to BI, is an overarching term for the process of capturing data electronically, analyzing that data, and presenting it in a form that decision-makers can use to help them to make better decisions, i.e. it provides the "evidence" to influence or to back up those decisions. There are also many subsidiary names for different BI activities such as data analysis, on-line analytical processing (OLAP), and data visualization.

Gartner, a global information technology research and advisory company, describes BI as:

"An umbrella term that includes the applications, infrastructure and tools, and best practices that enable access to and analysis of information to improve and optimize decisions and performance." [1]

So BI is supported by fit-for-purpose technology, with BI tools combining historical information with data ingested from other systems to provide a comprehensive picture for decision-makers. The best BI tools capture activity in real-time and present it almost immediately in readily-accessible visual forms such as dashboards. This enables the people who look at the data, and visualizations, to rapidly respond to emerging trends and activity (as needed). However BI, and BI tools, are not just focused on real-time decision making – it also provides a record of activity which can be utilized to plan future strategies, resourcing, and investment.

In terms of the potential for the ITSM use of BI, it's important to understand that BI is nothing new. With the available BI tools and techniques having matured since the term "business intelligence" was first proposed in 1989 – as the umbrella term for applying data analysis techniques to support business decision-making processes. The BI technologies initially evolved from older, mainframe-based analytical systems, such as decision support systems (DSS) and executive information systems (EIS).

Plus, it's important to recognize that BI is no longer limited to data analysts, and similarly titled roles, with self-service BI now empowering people in all types of roles to get insights into data, and potentially hidden relationships, that allow them to see new opportunities and to make faster, better-informed decisions.

1. Source: http://www.gartner.com/it-glossary/business-intelligence-bi/

Why Does ITSM Need BI?

When an IT support function is a team of two people (and one of those is most likely "the manager"), reporting, resolution management statistics, and the identification of emerging trends is relatively simple. Or at least it seems to be, as IT support staff think that they can see what is happening in terms of IT service delivery and operational performance.

However, when there are many IT support team members in a larger ITSM team – working across different shifts, in multiple locations, potentially across different geographies and time zones, and working in different languages – such analysis becomes far more complex.

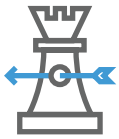
This is where BI tools, techniques, and methodologies can enable IT organizations to collect data from internal and external sources, to prepare the data for analysis, and then to develop and run queries against that data – with the BI tool using reports, dashboards, and data visualizations to present the results to different team members and stakeholders in the format that best suits their decision-making needs and their personal data-consumption preferences.

Thus a centralized BI tool can be used to draw information from one or more IT management and ITSM systems, to automatically assemble and present that information into a single view/dashboard of the overall service delivery and support operation for the organization – with the range of ITSM BI use cases varied and only limited by the ability to access various data sources and the imagination of IT support staff.

For example, and starting simply, the corporate IT service desk in India might be recording end-user issues with an application eleven hours before end users on the East Coast of the US start work. If that information just resides on the ITSM system in Mumbai, then end users in the US will waste time and resources trying to access that application, and then create a substantial volume of incidents for the US service desk, which should have already known about the issue.

Centralized analysis and reporting would enable the Indian team to notify all end users worldwide, including those in later time zones, of the issue as it is recognized, thereby saving the end users time, and freeing up the US support staff to resolve the issue, rather than having to record multiple instances of a known problem.

More example BI and ITSM opportunities are outlined in a later section.



The State of Native ITSM Tool Analytics Capabilities

Many IT organizations are already leveraging ITSM data to some degree, such as incident trend analysis and performance reporting. They might even already have processes in place to deal with the above simple example. But so much more could be achieved through easier, and more insightful, access to the data "trapped" within an ITSM tool or multiple IT management systems. So before we look at what, and how, it can be done, it's worth pausing to consider what's stopping the more pervasive use of BI for ITSM.

There are a number of possible causes, and the reluctance to use BI for ITSM could be due to more than one of them.

Firstly, few would argue with the saying "good decisions are guided by good data" or the logic that great businesses are built on good decisions. So maybe all the hype surrounding "Big Data"[2] has made people think that the ITSM data set just isn't big enough to pay attention to? Or maybe the "cobbler's children"[3] principle applies to IT organizations, with them too busy dealing with other business-unit information needs to spend time delivering against their own? Both could be legitimate reasons for the corporate IT organization and ITSM professionals missing the opportunity that is BI.

Or is it because IT organizations don't see the need for planning and improvement? Probably not, as for most businesses, the IT and cloud-service infrastructure, and annual IT budget, are now so large (and potentially still growing) that the failure to plan and to continually seek out improvements in efficiency and quality of service is not an option. It happens, it has to happen, although one could question how much better it could be with access to more and better data or information, i.e. through BI, to fuel decision making.

Or finally, is it because ITSM tools don't give as much insight into the data they hold as they could? It's definitely a strong possibility as native reporting, and similar capabilities, are a common area of discontent and complaint from ITSM tool customers – with the ITSM tool native reporting capabilities often seen as difficult to use, ineffective, or both.

2. "Big data is a broad term for data sets so large or complex that traditional data processing applications are inadequate. Challenges include analysis, capture, data curation, search, sharing, storage, transfer, visualization, querying and information privacy." Source: https://en.wikipedia.org/wiki/Big_data

3. "The shoemaker's children go barefoot." Source: https://en.wiktionary.org/wiki/the_shoemaker%27s_children_go_barefoot

This is backed by research from industry bodies such as the Service Desk Institute (SDI)[4], which consistently identifies ITSM tool "reporting" capabilities as one of the most wanted areas of improvement. In its most recent research report[5], SDI reported three worrying ITSM tool reporting-related statistics:

1. Reporting was flagged as the second biggest customer frustration with ITSM tools – behind a generic "features" grouping but ahead of usability, customization, reliability, and price amongst others.

2. Reporting was second, again to a generic "features" grouping, in terms of the key innovations/improvements customers would like to see in ITSM tools.

3. The "inability to easily produce metrics and reports" is the thing that causes the service desk the most pain (53% of respondents), ahead of other pain points such as outdated ITSM tools, struggling with knowledge management and self-service, and budget constraints. Sadly, it was also top in 2012.

4. The Service Desk Institute is a professional body for everyone working in the IT service and support industry.

5. Source: http://blog.servicedeskinstitute.com/new-research-reveals-frustration-with-itsm-reporting/

Reaping the Benefits of BI for ITSM

It's easy to look at BI technologies and to glibly state that they will give your IT organization greater insight into the wealth of data trapped inside disparate IT management and ITSM tools. But as with many of the things that can make a difference with IT service delivery and support, it's not that you "do" them but rather that you do them with a very specific purpose or set of objectives.

So what could you achieve with BI in ITSM?

How the Benefits of BI for ITSM Stack Up

The potential benefits of introducing a BI capability – the tools and techniques – are varied and, at a generic level, include:

- Speeding up and improving the quality of decision making
- Optimizing business processes
- Increasing operational efficiency and effectiveness – from individuals through to teams and cross-team processes
- Spotting business issues of various sizes and differing impacts
- Improving customer relationships
- Increasing asset use and technology return on investment (ROI)
- Reducing the risk of non-compliance with regulatory, legal, or contractual requirements
- Increasing revenues and identifying new market opportunities
- Assisting the business in gaining competitive advantage

Taking these generic BI benefits and applying them to the ITSM ecosystem, BI tools and techniques can provide:

- **Increased insight and proactivity**. BI offers senior managers, and more importantly if shared, ITSM staff, near real-time visibility of the current "health" of the IT organization's operations and service delivery. This enables staff, who can often be the "real decision makers" in a fast-moving ITSM environment, to be proactive rather than reactive to service-based issues and end-user issues, queries, or complaints. This can result in a number of improvement opportunities including improving services, upping efficiency and effectiveness, increasing customer satisfaction and/or customer experience, and better governance.

- **Access to all data through "a single pane of glass**." The current variety of ITSM and IT management tools utilized by a corporate IT organization might record data in various formats. And while these discrete systems will offer their own reporting tools and user interfaces, for the manager and ITSM staff, gaining a consolidated view of all the available data is not just difficult, it's also time consuming (and maybe operationally impossible). A modern BI tool will offer automatic import and integration of standard file formats such as XLS, XML, CSV, and HTML, and most importantly provide a consolidated view via an accessible dashboard. Having such information, including trend data, immediately at hand offers up significant opportunities to improve services, up efficiency and effectiveness, increase customer satisfaction, and provide better governance.

- **Clarity of importance**. The real "intelligence" of an IT support function is the staff dealing with the seemingly endless flow issues. They can spot patterns, identify solutions, and being sensible people, always seek to resolve the issues with the minimum effort for themselves. However, spotting patterns requires visibility of the information relating to issues, which can be difficult as data sets increase in size and complexity. It also requires consistent categorization of those issues. A BI tool can present a dashboard of activity reports in different categories such as funnel and pie charts, with color-coding for the level of severity. It can also identify "outliers" and assist in re-categorization where needed.

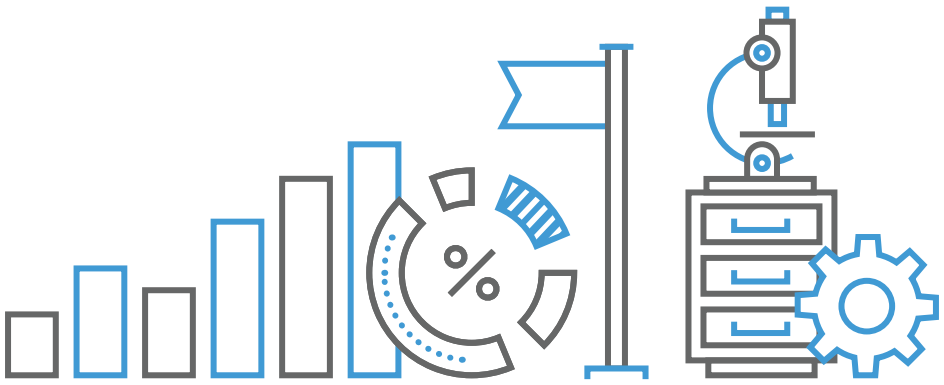
- **Alerting to prompt the required action**. Dashboards can be configured to provide email (or even text) alerts to appropriate staff, based upon their roles and skills, in response to a particular set of scenarios. This means that the most appropriate use is made of available support and management resources, and pertinent information is readily and appropriately disseminated across the organization as needed.

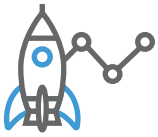
Example ITSM BI Use Cases

Looking a little deeper into IT operations, there are many potential ITSM BI use cases. These include, but are not limited to:

- Understanding how the IT ecosystem works in reality – to identify which service level targets can't be (consistently) met; or conversely, those that can never fail and are as such pretty useless as targets.
- Demonstrating (modeling) how upping or lowering service levels will increase or decrease IT costs versus the change in business performance. It could be an easy way to reduce IT costs with a minimal impact on business operations.
- Using "predictive analytics" to understand the likelihood of future outcomes based on historical data. Identifying similar systems or hardware that may be vulnerable to a known fault.
- Using ITSM data from various tool modules to create a real-world service taxonomy. This could be as part of a larger service portfolio management initiative.
- Correlating service desk contact methods to issue type, in order to understand how best to encourage and increase self-service adoption.
- Improving service desk efficiency and effectiveness. It could be as simple as refining the incident classification hierarchy or as complex as understanding "flow" across a number of common service desk scenarios.
- Improving the IT knowledge base and self-help facility, and consequently reducing service desk workload.

Then there are opportunities around other ITSM needs and activities such as more accurate availability and capacity management decisions, reducing change risk, improving governance, reducing financial "wastage," and improving customer satisfaction. And I'm only just scratching the surface in this white paper.





Starting Your BI for ITSM Journey

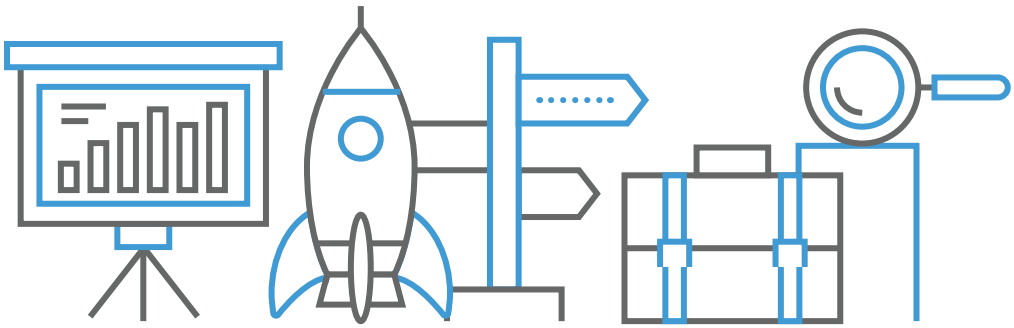
So hopefully you can see the potential of using BI for ITSM, but how does your ITSM organization first dip its toe into the BI waters?

Well firstly, it might not be as great a leap into the unknown as you think if your IT organization is already using BI for other, potentially business, purposes. If this is the case, then what follows is still useful but should be taken onboard in the context of the existing corporate BI capabilities available to you.

If you must however "go it alone" then you'll need to consider your BI requirements across:

- What you wish to achieve with BI and how success will be measured
- The people and skills required
- A BI technology investment
- Access to BI best practices
- Baselining your existing information, i.e. what you have been reporting on for many years (albeit possibly in a convoluted and time-intensive way)

Hopefully this paper has given you some ideas about the art of the possible with BI for ITSM. In terms of the people and skills required, it really does depend on your existing circumstance and experience. As outlined in the following section on high-level requirements for BI, it also depends on the level of intuitiveness of the BI tool, as the required skills might already sit within your ITSM organization – and not just with data analyst types.



The High-Level Technology Requirements for BI for ITSM

BI tools have developed rapidly since the so-called Executive Information Systems (EIS) of the 1990s. The majority of BI tools now have web/mobile interfaces by default and can ingest multiple file formats in real-time, displaying reports, via a dashboard on a continuous basis, in near real-time. However, as with most technologies, not all BI tools are born equal and it's important to understand what you actually need.

So what should you look for in a BI tool for ITSM? It really will depend on your operational needs and use cases but the following eight requirements are a good place to start:

1. **That it's intuitive and easy to use**. To gain maximum value and productivity from the BI tool the user interface (UI) should be intuitive and easy to use. Make sure it requires spreadsheet-level computing knowledge to configure the dashboard and to analyze reports, rather than the programming skills required for an old-school EIS.

2. **Self-service for any authorized personnel**. Along with the requirement for intuitiveness and ease of use, the BI tool should be suitable for different types of roles, not just data analyst types. Such self-service functionality will reduce the need for specialist support, and more importantly empower staff to become more proactive and even more motivated in their roles.

3. **Any time, any place, any device access**. With the increasing mobility of workers and managers, a mobile/web interface should be a base requirement for any modern BI tool. However, the BI tool's mobile interface must be able to adjust to various screen sizes, operating systems (OS), and device requirements – whether they be corporate or BYOD devices.

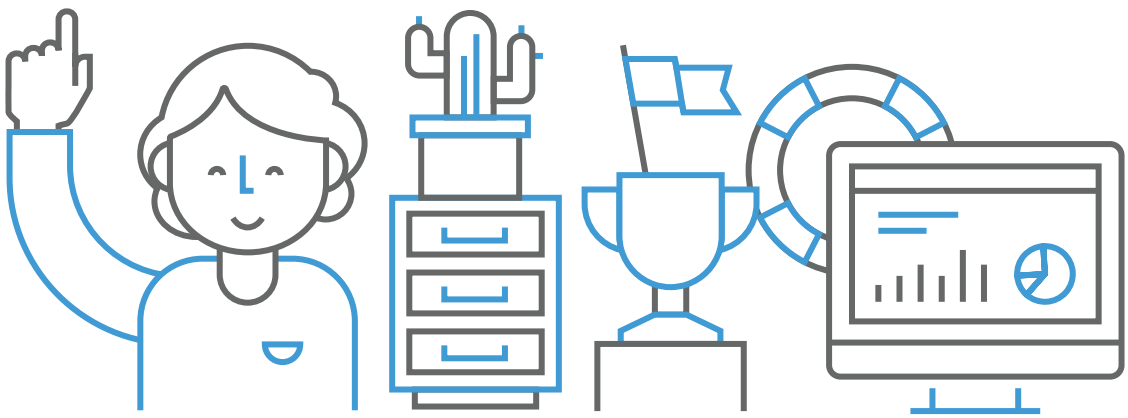
4. **The option of software-as-a-service (SaaS) or on-premise**. The choice will ultimately depend on a number of variables including corporate IT strategy and policy, and industry regulation. The choice of both SaaS and on-premise allows for the flexibility to start with on-premise and to later move to SaaS, or vice versa. Plus, it provides the ability to move between the two, as IT strategies and business demands change.

5. **If on-premise, use dedicated infrastructure**. Unless the system is in a virtualized mainframe environment, the server(s) delivering the BI tool should be dedicated, albeit having the maximum bandwidth connectivity to the systems it is ingesting information from.

6. **In-memory processing**. The best BI tools use in-memory processing for rapid analysis of the data, avoiding the delays associated with retrieval of data from disk or other storage mechanisms.

7. **Ease of integration and data source agnosticism**. In whichever environment/ application it is used, any good BI tool should be agnostic of the underlying data sources, with documented and open application programming interfaces (API).

8. **Around the clock support**. Where a BI solution is supporting near real-time alerts and analysis, rather than month or year-end reporting, the package must have up to third-level support available 24/7 x 365. Of course online, self-service support capabilities will help, as will access to context-sensitive help within the BI tool.



Best Practices for BI for ITSM

There are several phases to selecting, deploying, and establishing a BI system in any business environment, irrespective of the described simplicity and functionality of the package by the vendor. Here I focus on selection and deployment.

BI Tool Selection Best Practice

Before deciding upon a BI tool for ITSM, ensure that you have considered the following best practices:

- **Audit data sources and BI tool capabilities**. Before selecting a BI tool, there needs to be an audit of the systems that will be providing data to it, and whether the respective data sets can be integrated with/imported to the proposed solution. The audit also needs to consider connectivity, i.e. the network between systems, as to make decisions in near real-time, the BI tool user will need data to be delivered in near real-time.
- **Assess processing and storage requirements**. In addition to direct connectivity, there also needs to be an assessment of the processing/storage capacity required and the obligations for back-up/archiving/encryption.
- **Assess BI tool capabilities against new and existing reporting requirements**. The proposed BI tool needs to address all the reporting requirements (both near real-time and historical) required by the organization. Also assess the immediacy and trustworthiness of data.
- **Ensure that the BI tool's mobile capabilities meet all known use case scenarios**. The information/dashboard needs to be accessible over a variety of devices in multiple locations simultaneously, not only to reflect that issues don't always arise when the ITSM professional is in the office, but to ensure consistent decision-making.
- **Be confident that the chosen BI tool can be used with limited training and experience**. An ITSM team member or manager shouldn't need to know the intricacies of data integration from multiple systems, or how to code in order to present the information they need in readily accessible interfaces. Ideally, if a user can use a spreadsheet, they should be able to use the BI tool. In particular, the BI tool should offer "drag and drop" for data sources, and preconfigured templates and displays for the dashboard.

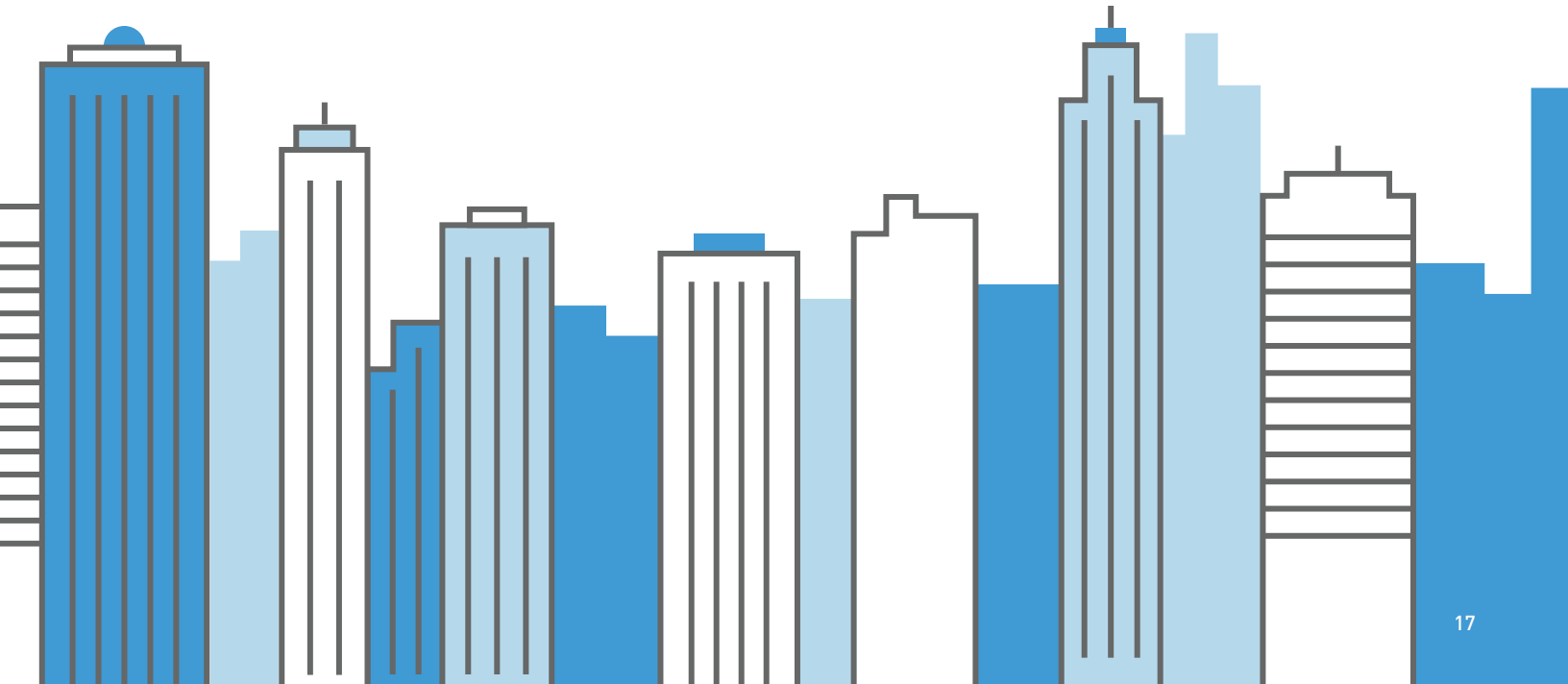
- **Don't attack your BI needs alone if there are other corporate BI opportunities**. As already mentioned, yours might not be the first or only BI initiative in your company – so ask around to see if existing capabilities can be piggybacked. Or, if you are the first, then also consider if your "BI for ITSM" initiative can be run alongside that of another business unit adopting BI for the first time. There might be no economies of scale or the ability to learn from the successes and mistakes of others, but it's worth inquiring. However, ensure that the BI for ITSM initiative's scope is ring-fenced before deployment starts, otherwise scope creep could kill the BI project's successful delivery.

BI Tool Planning and Deployment Best Practice

Once sufficient attention has been paid to BI tool selection, there are a number of BI best practices that can be applied to making the BI tool operational in your organization:

- **Create BI policies**. These policies should encompass not only which roles have access to what data but also define how data is captured, stored, and processed. At a more granular level, the policies should talk about ensuring data security, integrity, and availability.
- **Plan to continuously check data accuracy**. Good analysis, and good decisions, require good data. It's inevitable that if not monitored and addressed, data entry by staff and acquisition from systems will become inconsistent and thus reporting will become inaccurate. However, to try to get all the systems that are feeding into the BI tool "accurate" before tool deployment can be a wasted effort and delay the delivery of the benefits of the tool. Instead, the best practice in BI is not just to view the dashboard, but to also monitor the outliers; identify things that are wrongly represented, and then feedback to the person/systems providing the data. This then becomes a "virtuous circle" of continuous improvement of the quality of the data represented in dashboards.
- **Ensure that the privacy and human behavior aspects of BI are addressed**. The monitoring and insight is not just of the systems and processes, but most importantly also of ITSM staff. They need to be made aware of the impact of BI, and it must be implemented in a way that is as "constructive" and "supportive" of their work as possible. Otherwise the BI initiative might be seen as "Big Brother"-esque and viewed as draconian, resulting in dissatisfaction by staff. At worst, staff might avoid recording on the "formal" systems fearing that they are getting judged and instead work outside those systems, leaving a hole in the data the BI tool was intended to capture.

- **Don't treat BI as a silver bullet for ITSM**. A BI tool is not a panacea for all the woes of an ITSM manager. It should support better management and decision-making, and should help to reduce costs both for the ITSM function and the business overall. However, it shouldn't be oversold to either business management or ITSM staff as the thing that will make everything right. Plus, if the data is inconsistent, or the staff avoid using the system, it will never deliver the proposed benefits.
- **Start small and build on successes**. Don't just automatically unleash BI across the whole ITSM ecosystem. Instead, start with a finite number of ITSM roles and use cases to ensure that everything is as it should be – from ease of use through to the accuracy and timeliness of data – as any such issue might detrimentally affect BI adoption in a wider rollout. Once any initial wrinkles have been ironed out, the BI capability can be deployed more widely within the ITSM organization.
- **Ensure that education and training are sufficient**. While there is a reliance on the BI tool being intuitive and easy to use, there is still a need to educate users in what BI is and what can be done with it. Plus, training or coaching on some of the more complicated features of the tool might be necessary.

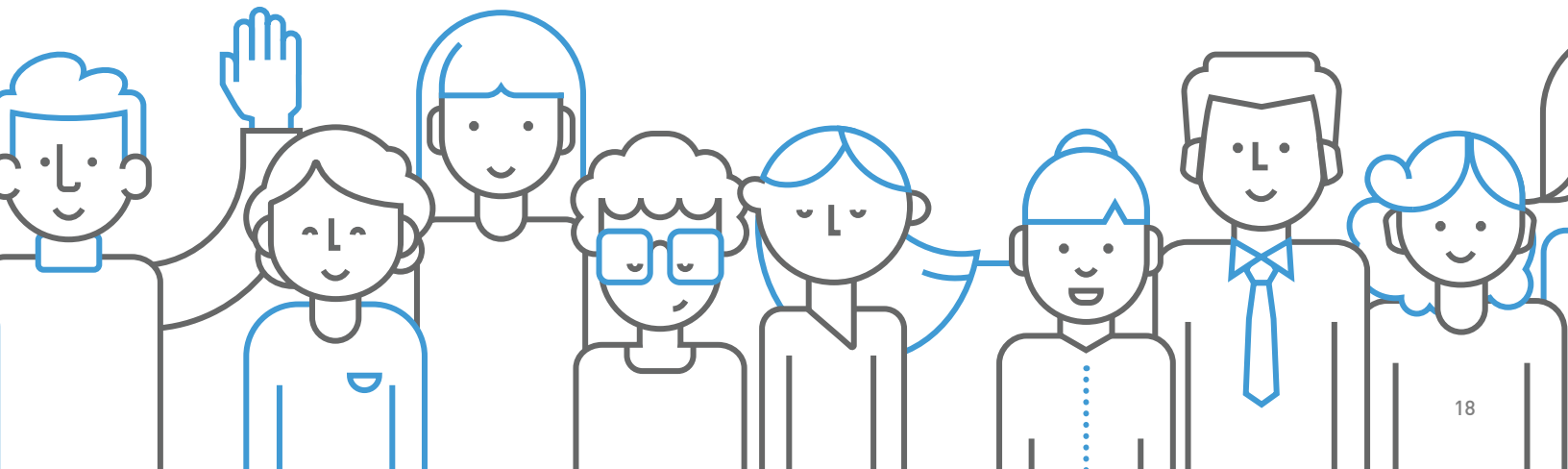


What Lies Ahead for BI?

The near future of BI has been labeled advanced analytics, a term which covers the inclusion of a level of artificial intelligence into the tools. Thus, rather than being passive, and in a sense just reporting activity (albeit in near real-time and facilitating better decision-making), the tool would be proactive, undertaking root cause analysis and providing suggestions for decisions based upon a prediction of future issues. So whereas BI would answer the question "What happened?" – advanced analytics could answer questions such as "Why did the event happen?" and "Will the event happen again?"

As a basic example of advanced analytics in ITSM, if a number of a particular make of PCs (or their users) start reporting similar faults in a short timescale, the BI tool could automatically provide a list of all similar machines in the organization, with a proposed resolution for the issue. Without human intervention it could also distribute notification of the issue, and perhaps the resolution, across the organization.

Advanced analytics could also be used to predict issues before they happen – facilitating predictive maintenance rather than chasing the issues post impact via the traditional break-fix model employed by IT. Or, rather than just repeatedly reporting on the common issues each month, advanced analytics could offer automatically up service or process improvements to improve quality and thus reduce downtime.



Summary

BI can bring a wealth of benefits to ITSM operations including better decision making, business process optimization, increased operational efficiency and effectiveness, higher IT service availability, increased end user and customer satisfaction, and reduced risk. So take a moment to understand why you aren't using BI for ITSM in your organization, and to imagine the potential benefits if you did. The adage "work smarter not harder," while eight decades old, is an obvious mantra for BI and the need to shepherd in a new era of greater insight and better ITSM results.

Want to benefit from SysAid's built-in BI Analytics and learn how it can save you precious time?

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