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How to Get to Better Reporting

Build Data Confidence, Gain Useful Insights, and Create a Story that Advances the Mission

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Introduction

Though private industry has made great strides automating their processes over the last 20 years, the public sector is still struggling with the same well-trodden manual approaches.

Change has not occurred because technology is only part of the problem and must fit your paradigm to be successfully implemented and leveraged. Achieving this requires people, process, and technology. People help make the change, which much be done through a set approach or process, and then the appropriate technology is needed to scale it.

Transforming can be achieved by taking small, manageable steps in key areas. Learn how you can organize and gain confidence in your data, create insights and analysis, and move to real-time reporting to shorten review cycles through three simple steps. Putting together these three steps and continuously iterating and working to improve will help to build a better team of financial analysts, data analysts, comptrollers, etc. so that their future role can be more about analyzing the data than validating it.

This paper was developed from insights gained during a panel discussion between Lt. General Karen Dyson, Brian Brinkmann, Ben Mathew and Ryan McCullough – all experts in data and analytics with a range of experiences.

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Three Steps to Gain Confidence in your Data

1

Organize Data to make it More Useful

- Data quality is of utmost importance

- Find out how much confidence you need to have in your data

- Once you have data you can trust, you can have conversations based on data rather than opinions

- Build a culture of embracing data for problem solving at your organization

2

Ensure Data is Accessible and Ready to Analyze

- Know the difference between analytics and reporting. Analytics is the filtered data. Reporting is making a story from that data.

- Understand what leadership wants and how they want it. It is important to tell leadership a story with the data in a way that it easily digestible, so that they can use those insights to make decisions that will advance the mission.

3

Invest in the Right Technology to Promote Usability

- Begin by leveraging tools already at your disposal and build iteratively

- Investigate automation tools and embedded analytics

- Build iteratively upon your improvements

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The push for real-time analytics across the public sector has reached a fever pitch

The public sector has mostly remained stagnant in their reporting approach over the last 20 years, but the world and private business have moved on. Data and information are moving at a faster speed than ever before, but the technology and processes used in public sector planning including intake, prioritizing, and budgeting, are largely still slow, cumbersome, and manual. The result is budget analysts are so focused on collecting and aggregating the numbers that their significant investigative, evaluative, and interpretative skills are underutilized.

Why this is happening:

- Manual processes are slow and prone to human error
- Data comes from multiple sources, leading to differences in data fidelity and timing, which causes it to be questioned
- Old data must be re-run again and again as priorities change
- There is a fundamental mismatch between how things need to be done and how they are done.

Why hasn't there been change?

Technology alone cannot solve this problem. Technology is part of the solution, but it must be implemented in a way that improves existing processes without requiring an entirely new approach. In short, the technology must fit your paradigm to be successfully implemented and leveraged. Achieving this requires an ecosystem of people, process, and technology working together in harmony to pivot towards a new way. People are needed to help make the change, following a set approach to ensure the process is successful, and the technology to scale these processes needs to be available.

Though change can seem overwhelming, it be achieved in incremental steps with limited disruption. However, achieving this will require investment in the tools, those who will use them and training to use them, so that you can understand how to optimize these tools moving into the future.

There are three steps organizations within DoD should take towards better leveraging their people, processes, and technology so that they can match pace with private industry.

1. Organize the Data to Make It Useful
2. Ensure Data is Accessible and Ready to Analyze
3. Invest in the Right Technology to Promote Usability

"

Embrace the change. Embark on the journey changing the way we do business.

Lieutenant General Dyson

Step 1: Organize Your Data to Make it Useful

From the beginning of the reporting process, data quality is of utmost importance.

Build Confidence in Data

Building confidence in your data is an ongoing task, but it starts with three critical steps:

1. Understand where the data is coming from

2. Be prepared for data divergence

3. Connect to systems of record
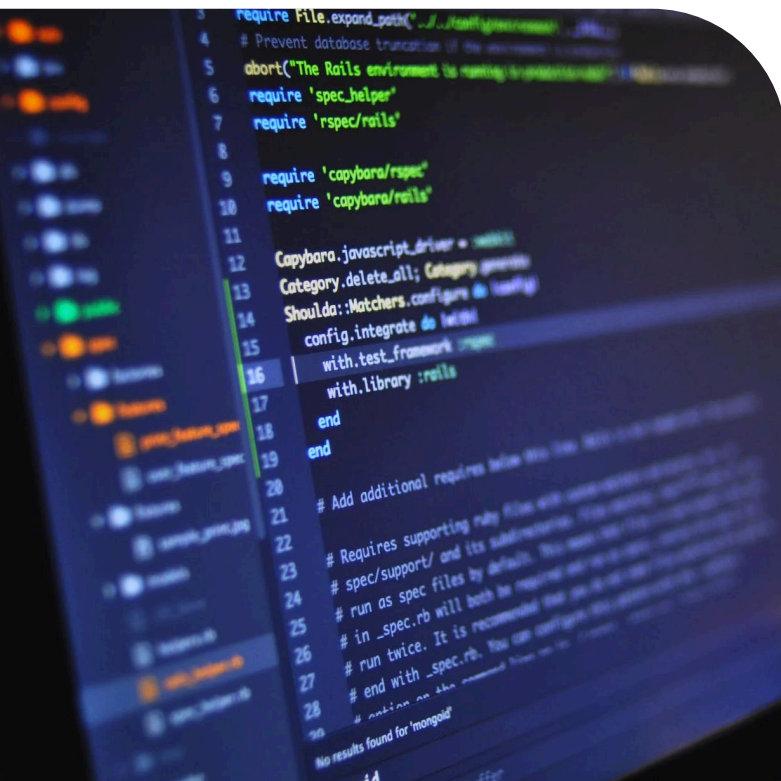
> " No matter how good your analytics tools might be, all your analysis is going to be flawed if your data is not right. It really always starts with the data.

Brian Brinkmann
an analytics expert

When you have confidence in your data you begin to foster a data culture which looks at data as a means to solving problems instead of suspect information which could lead one astray.
The result of creating data confidence is conversations shift from "where did that data come from" to "what does that data mean". This is the first step in transitioning from presenting information to deriving knowledge from that information.

The value of confidence in the data cannot be understated and is the critical foundation for financial managers to become strategic partners.

Understand when "right" is "right enough"

Once you establish confidence in the data, you must determine the specificity required to accomplish your task.

For example, accounts often require greater than 99% confidence when closing books; you must ensure numbers are correct down to the last penny. Getting that granular takes a lot of effort, but it is not necessary in every case. Often perfection is the enemy of good enough. For strategic discussions having data that is 70%+ accurate may provide enough directionality to quickly select the proper course of action.

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"The reality is we almost always have incomplete information.

Brian Brinkmann
an analytics expert

Stop debating, start solving

Once people trust and have confidence in the data, the data accuracy debate ends, and the strategy debate begins. Alternative courses of action can be evaluated based on data augmented with – but not exclusively based on – opinions.

This is when organizations begin to successfully solve problems and strategically plan. The discussion focuses on finding an answer, and considering the best options. Once you stop asking whether you have the right data you can have meaningful, strategic discussions and begin better meeting your mission.

To have these great problem-solving conversations, it is important to have the intellectual curiosity to ask questions about the data and think creatively. As an analyst, you may have visibility into questions on the margins that leaders do not have.

Shifting data culture

Once organizations start having better conversations based on the data, a new data culture emerges which regularly relies on data, audits results, and evaluates alternative options before making decisions. Ultimately, data becomes the common language used to help problem-solve on how to best achieve the mission.

When you can use quantitative and qualitative data to have better discussions, you can start to brainstorm questions, hypotheses, and ideas of potential courses of action. When your organization embraces a culture of data it will lead to:

- The ability to act more quickly when conditions change
- Greater frequency of meeting the long-term mission
- A more streamlined review process

When an organization has confidence in its data, people can begin to produce dashboards, infographics, and reports that others rely on.

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Step 2: Ensure Data is Accessible and Ready to Analyze

Once you have the data right, you need to make it actionable.

The first step is to understand the key differences between analytics and reporting

Wait…aren't analytics and reporting the same?

To begin talking about analytics and reporting and explain the key differences it is important to understand the differences between data, information, and knowledge.

> "You keep using data, information, and knowledge interchangeably, as if they are the same thing. They are not.
>
> Ryan McCullough

One important role analysts play is to filter and transform raw data so that it can be presented in a way where leaders can make a judgement. But this is not where an analyst's value ends. Financial analysts need to also be able to provide information and some knowledge to leadership because they are the ones who are looking at the numbers every day. To become a provider of knowledge instead of just a provider of organized numbers you must evolve through tools, training, and natural inquisitiveness.

Understand what leadership wants and how they want it

Leadership is not as focused on the day-to-day operational aspects of the data. They may not understand a balance sheet or cashflow as well as synthesized data on an executive dashboard that ties to the big picture.

Data – It is a fact or figure absent of any analysis. An example of data is temperature.

Information – It is data plus some analysis. 30 degrees outside is cold and one should wear a coat.

Knowledge – It is putting information and data in its context; its applicability, constraints, etc. For example, if there is a pattern of the weather outside being cold in winter, and a coat should be worn on a cold day, then someone should bring a coat with them during that time of year. Knowledge brings a lot of information together to provide a larger understanding, including the ability to predict other information that we may not have already. Knowledge means you can make predictions on tomorrow based on the trends you are seeing today.

Analytics and reporting - Analytics is dealing with raw data, filtered data, and making sure there is specificity down to the penny, whereas reporting is making that data into useable knowledge and insights so that decision-makers and leadership can operate in the abstract.

Raw data – data that has not been organized in a meaningful way

Filtered data – data that has been organized

It is important to tell leadership a story with the data in a way that it easily digestible, so that they can use those insights to make decisions that will advance the mission. This is how you advance from sharing analytics to reporting.

Step 3: Use the Right Technology

Finally, you need the solutions to share the real-time insights necessary to act quickly.

Creating compelling visuals is best be done using dedicated tools designed for real-time reporting – not presentation software. Many of these tools are easy to learn, have free training resources available, and often are already part of a software suite your department may use.

Executive-level Reporting
Some readily accessible tools include PowerBI and Tableau. These visualization solutions will allow for the executive-level reporting described earlier in this document. Developing a dashboard may sound intimidating, but many of these tools have pre-built templates you can use as a starting point.

The key element for success is to remember your audience. Creating the most compelling visual only matters if it answers questions being asked in the way they are being asked. Dashboard development is an iterative process which requires regular feedback loops.

While you are not one button click away from your end-state you are much closer than you think. Use templates, get feedback, and build as you go.

Analytics to Streamline your Workflow
Embedded analytics are purpose built visualizations within the applications that you are using, that reflect various aspects of your workflow and produce very specific, easily consumable insights about the state of progress.

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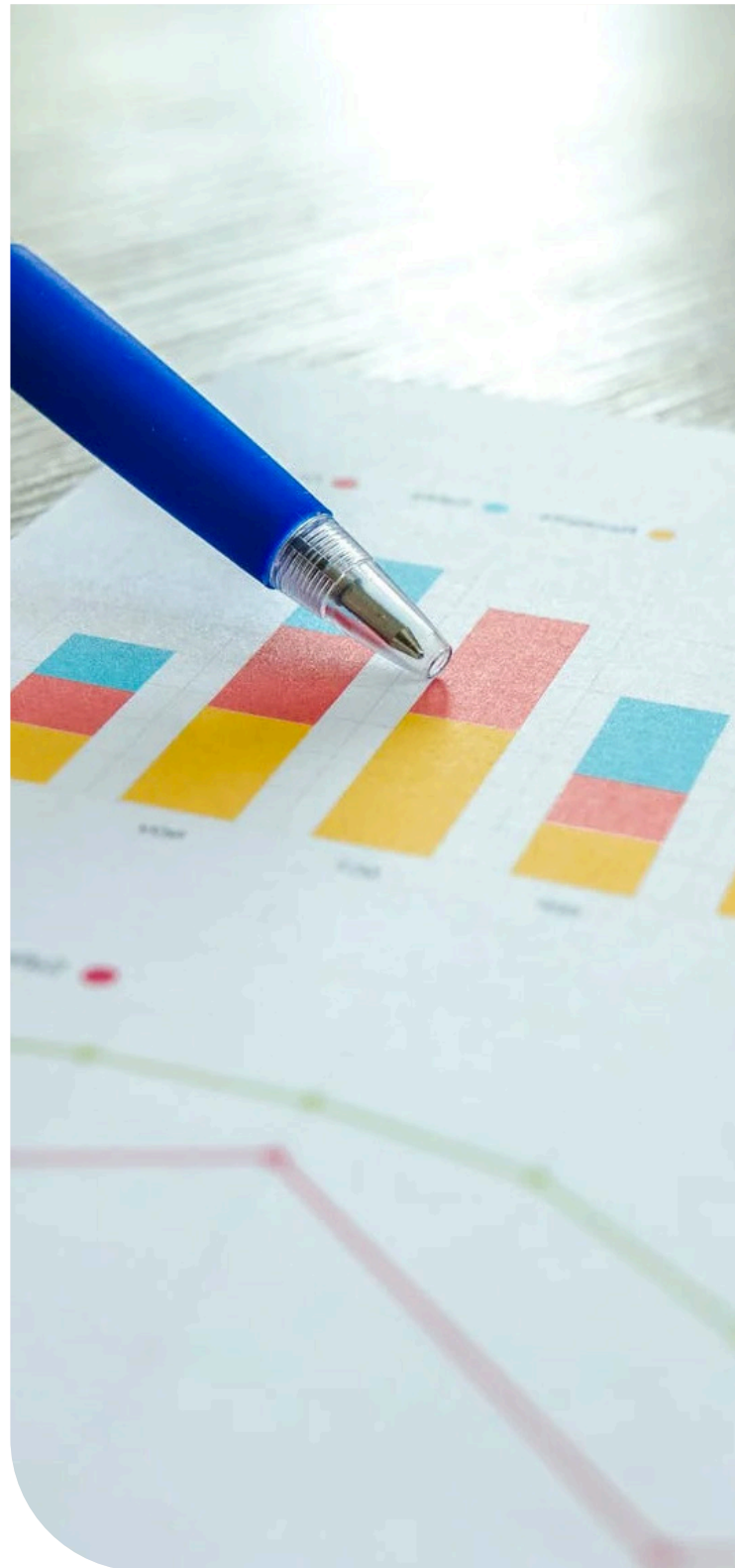
> We are in the age of automation. It should permeate the analytics and reporting process.

Ben Mathew
an embedded analytics expert

Embedded analytics help you to avoid the "swivel chair effect", i.e. constantly importing and exporting data from one application to another as you move between different tasks. Users can save time by staying in one environment to complete all of their tasks, which increases productivity and efficiency. Embedded analytics are easy to understand, convey specific data, and often have a very limited learning curve because each visualization is so narrowly focused.

It is for this reason that since first gaining traction in the early 2010s, they have been proliferating as an increasingly important component of software to drive efficiency in the private and public sectors.

These visualizations, reporting, and analytical capabilities are tailored to your needs within the application and customized to your workflow. They help you get from data to insight to course of action.

It's time to automate.

Automation is an essential component of digital transformation as it helps to shrink the time between insight and action. What does automation have to do with data and real-time reporting? It's a linear process with efficiency as the end goal.

One example would be automating the UFR process. Today, many budget offices collect UFRs in a variety of formats, then spend time collating that information into a master spreadsheet and then reporting on that data.

However, once you've established better data governance and have the right tools in place, that entire process can be automated. UFRs requests with

all the required information can be placed in a system of record, the data can then be organized to a central database, and that data is then reportable in real-time for the next review session.

AI/Machine learning are coming to bring even more efficiency

Machine learning introduces automation into workflows. Machine Learning and Artificial Intelligence (AI) have reached a stage where they can enhance intake and analysis. One example from the private sector is how Machine Learning is reducing the need for a person to review accident claims made to an insurance company. Instead of waiting for a person, the technology can quickly assess damage and collapse the early part of the review funnel.

While this is a powerful use case and will see greater efficiency, it does come with caveats. AI will not solve every problem and people remain critical of all of these processes.

Three Cautions with Machine Learning/AI:

- Be careful about building bias into training data. If you know what you are looking for you can create a self-fulfilling prophecy where the data is telling you what you want to hear.

- The algorithms need constant care and feeding. Data is changing and the world is changing. The same algorithm will not give you the correct result in perpetuity. Work with an eye towards continuous refinement.

- Bring expertise and context to the data. Data is not absolute. It needs your expertise and appropriate context to give you knowledge and the best answers.

However, there are certain steps you can take to ensure successful use of AI and Machine Learning Technologies:

- Start with a real business problem rather than the technology

- See if you have data you can trust and experiment with algorithms appropriate to the task

- Create or find a model (many are open-source) that can predict what is going on with high validation.

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The Future of Financial Management in the Public Sector

Though this kind of data analytics, artificial intelligence, and machine learning is top of mind for private industry, there are opportunities for public sector financial managers to make the same kinds of improvements by leveraging tools that can advance the way the data is being used.

For example, the Department of Defense wants to transform how financial analysts contribute by better linking the backroom to the battlefield. To achieve this, it is expecting to transform those closest to the data from collectors of information into strategists capable of providing visibility into the data who can then make recommendations on courses of action. It will not only make the DoD stronger as a whole, but it will provide frequent and regular opportunities for those working in financial management to contribute to mission success in a way never possible before.

What does this mean for financial analysts?

There is a growing expectation of the role of financial analyst to include data analysis, visualization and interpretation. To be successful, analysts will not need to be data scientists, but will benefit from their work for more efficient analysis and scenario planning. There is a need for them to move from being a data gatherer to being an informer.

How to be a successful data analyst

Financial analysts and other front-line subject matter experts will soon be empowered by data science embedded in the software they use every day. This approach will not only make data science available to the masses, but it will allow front-line experts to do more than ever before. However, to take advantage of these capabilities, financial analysts will need to become more strategic and mine software for the insights necessary to provide strategic value to the organization.

How to get started today

- Choose a goal. If there is one report, you typically have to run often after a meeting, start with updating your approach to delivering that dataset in real time.

- Identify the tools available to you. Your organization likely has a visualization suite available today which also has free tutorials. Start with what you have and build from there.

- Don't get distracted. Inevitably, you will find novel ways to do things but getting distracted by the plethora of technology available will veer you off course. Keep it simple to start and remember your end goal.

- Iterate. The process, the reporting, and the feedback won't be perfect the first, second, or third time. Remember this is an iterative process which takes time.

Create a structure or method for how you will start. Focus is imperative in this stage because if you attempt to do everything you will achieve nothing. Make sure you know the end-goal of what you are trying to achieve. That goal may be to conduct your new review with a single dashboard of real-time data. To achieve this you must develop a plan with rest stops in between to review, learn, and iterate your development.

Bringing colleagues into the process is essential to mature your organization's processes and ensure the value of your efforts are broadly recognized. Remember, this change requires people, process, and technology to improve your existing approach. Real-time reporting should be the priority but don't try to eat the whole elephant at once.

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Explore your tools and find new ways to take the data you are looking at to information and knowledge that will advance your goals.

Lieutenant General Dyson

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Summary: How to Get to Better Reporting

Better reporting comes in a variety of forms – be it analytics embedded in the software you use every day or via visualization tools. Whatever you choose – you need start getting data right. From there you can use the tools available to efficiently achieve your goals. It's important to mix and match capabilities and features to maximize productivity and clarity. Everything has a role in this ecosystem. Though there is no silver bullet, there is an opportunity for incremental improvements over time. These improvements will eventually help you make better reporting and ultimately better decisions.

About Decision Lens

Decision Lens is a strategic prioritization, resource allocation, and budget planning solution for the public sector. Our software empowers decision makers to confidently overcome to quickly make the right choices that enable them to effectively meet their mission. Customers across the Department of Defense, intelligence community, federal civilian agencies and state and local government rely on Decision Lens software to best allocate limited resources, connect disparate processes, and overcome data gaps for better integrated planning and strategy execution.

Improving Reporting with Decision Lens

Our software includes purpose-built analytics to support daily analysis of UFR prioritization to spend plan tracking and beyond. These analytics make it easy to quickly assess a situation and understand the current and future state based on projections. While these analytics primarily help the analyst do their job, Decision Lens also improves executive level reporting.

We integrate with third party visualization tools allowing you to create executive level dashboards. As Decision Lens can also integrate with systems of record, these executive views can include data from a range of systems. These visualizations offering rea-time data are ideal for executive briefings and over time can be increasingly honed to meet the needs of leadership.

Contributors

At an ASMC PDI Panel entitled, "It's not you, it's PowerPoint: Why it's time to fall in love with real-time reporting," a group of speakers, including retired Lieutenant General Karen Dyson, U.S. Army discussed challenges and opportunities in DoD Financial Management and Reporting.

Decision Lens recently hosted a panel discussion with data and analytics experts from the public and private sector during which best practices where shared to empower financial managers across the government to improve reporting and more effectively drive organizational strategy and alignment.

Expert speakers included:

- Lt. General Karen Dyson
- Brian Brinkmann
- Ben Mathew
- Ryan McCullough

Learn more at www.decisionlens.com

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