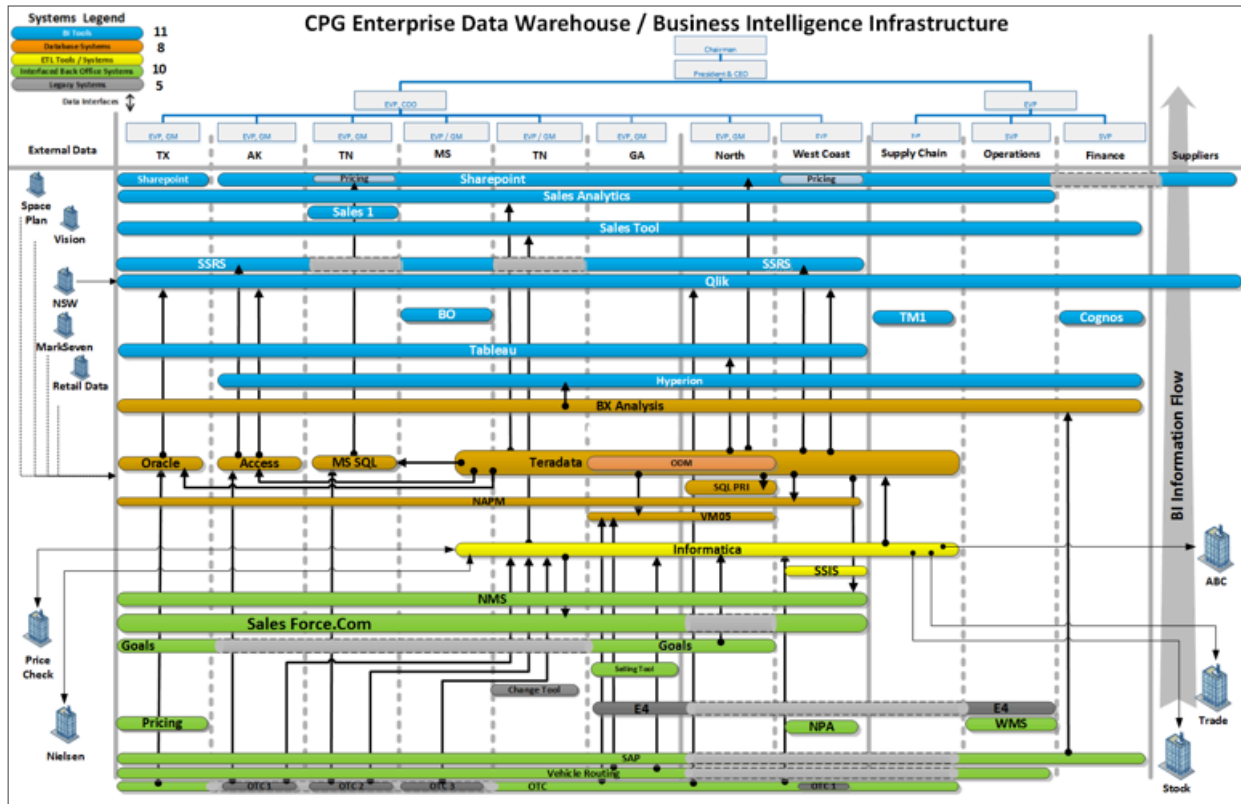




**BUSINESS
COMPLEXITY
SIMPLIFIED**

Visualizing
Your Enterprise's
Strategic Systems
at a Glance



“Making the simple complicated is commonplace. Making the complicated simple? That’s creativity.”

- CHARLES MINGUS

Overview

“The appeal of visualization is rooted in biology. The brain simply processes images better than words, devoting more than half its processing power to this task;... the human eye tends to seek out and focus on visual stimuli that are easy to recognize... including color, shapes, and patterns.” - Alan Siegel and Irene Etzkorn from Simple: Conquering the Crisis of Complexity

As enterprises grow, they become more complex. And as complexity grows, so does the desire to assess and simplify enterprise systems and the business processes they support. Enterprises

inevitably strive to simplify systems and processes in order to maximize cost and efficiency—and they first start by assessing their current complexity.

The problem? Any number of complex software applications or use of unwieldy diagramming tools reinforces that complexity without making those systems and processes any easier to understand, document, or describe. Without both technical and non-technical stakeholders understanding their systems at a glance, any strategic efforts to simplify the enterprise often become confusing and frustrating.

Overview (continued)

People at all levels of an enterprise—from executive leadership to the people who live and breathe these enterprise systems every day—can understand and use this unique visual depiction. Organizations spanning many different industries have already used this tool successfully to address their system complexity issues.

This whitepaper describes a visualization process and tool that simplifies all key enterprise systems and related business processes while retaining every level of detail needed by technical stakeholders.

This visualization process is:

- **Cost-effective**—often less expensive than fancy software solutions on the market.
- **Easily maintained** so that enterprises continue to use and update it.
- **Accessible to people at all levels of an organization**, both technical and non-technical.
- **Supportive of a wide range of strategic initiatives, programs, and projects.**

The Critical Problems behind an Enterprise's Failure to Visualize System and Business Process Complexity

To move fast while reducing costs, acquiring new customers, and increasing technological efficiency requires an accurate understanding of your enterprise's current state. Plus, you must update that understanding continually as you implement new technologies and map out your future state.

Currently, tracking all of the enterprise systems and related business processes that support organizational goals in these new kinds of rapidly changing environments is overwhelming. There are simply too many complex systems and business process data to sift through. Non-technical stakeholders usually have trouble grasping technical details of complex enterprise systems and business processes, and they struggle to acquire a wider organizational perspective. As a result, stakeholders for specific business processes and systems know their own silos well but often have trouble understanding how their processes and systems fit into the larger enterprise.

Unfortunately, existing visual views of business processes and their underlying systems are usually developed for specific employee types, departments, and business processes. Plus, existing tools

that document enterprise architecture and business processes are often:

- **Expensive**, especially because purchasing specialized software, operating it, and maintaining it often leads to significant expense.
- **Difficult to learn**, which lowers the chance that these kinds of visuals will be consistently developed and used, especially by non-technical stakeholders.
- **Difficult to maintain**, which means they will grow outdated rather quickly.

A more holistic view would help with interdepartmental collaboration, understanding which processes and systems fit together, and presenting opportunities for drastically simplifying and improving the organization. How can you get everyone on the same page?

CIOs know that a single visual view that accurately describes the enterprise in a holistic fashion is invaluable; all levels of the organization and employee types must be able to understand and use it to help support a wide range of strategic initiatives, programs, and projects across the enterprise.

Here's how we accomplish that goal.

Solving the Enterprise Systems Visualization Problem

Using the example of a consumer products goods company (CPG) we see a logical abstraction of the organization, its supporting systems, and business processes. The visualization describes the systems from the viewpoint of different stakeholders including end-users, developers, project managers and executive management.

The visual clearly shows the overall enterprise from a non-technical perspective by illustrating:

- The organization's roles and departments through vertical columns.
- Their systems through color coding and thematic arrangement, such as business intelligence tools or database systems.
- Their business processes through arrows that connect systems to each other.

This blended format visually depicts the enterprise so that it's easily understood by all employees.

For example:

- A CEO might need to just see that the current database setup is too overly complex and inefficient, and that the final end state will be modernized, efficient, and more cost-effective.
- An EVP might need confirmation that her department's need for new business intelligence dashboards is justified and part of the future plan.
- An IT manager might need to see the technical specifics behind the entire enterprise's back office systems to confirm a strategy and plan for consolidating or migrating away from legacy systems.

With its simplistic depiction, the visual removes the complexity of how an enterprise's organization, processes, and systems fit together while still retaining all relevant details needed for reference by any employee.

Let's look closer at the example of CPG to learn more how the visual depiction works.

Why Our Enterprise Systems Visualization Works

Consultants often fail to include and capture all of your key system information because they focus on specific systems or processes within an enterprise. To create the needed level of visual detail, our unique information capturing approach includes every strategic system and business process used by an organization. We do this with a specialized approach to personnel interviews.

- **Our personnel interviews uncover more thorough and relevant information.** We primarily develop our visualizations based upon an extensive interview process with selected employees from across the organization. While we do leverage some technical diagrams, it's more critical to actually hear from end-users about which systems are, and are not, used on a daily basis.
- **Personnel interviews include insights ranging from executives to lower level employees.** By conducting individual interviews with key groups of the organization ranging from lower level employees to the executive head of a given division, we completely capture systems usage and the impact upon key business processes for

which the employee is responsible or affected.

- **Additional group workshops build upon knowledge gleaned in individual interviews.** After completing individual interviews, we sometimes conduct group workshops using a variety of visual processes and tools (i.e. Post-It-Notes®, flip charts, brainstorming sessions, etc.) to validate and further build an accurate understanding of how the enterprise works (e.g. organizational structure, key business processes, and supporting systems).

Once we have gathered the information using our specialized approach, we develop the visual using the relatively inexpensive Microsoft Visio software application, reducing the need to purchase expensive visualization software.

In our example, the CPG Company was preparing for a significant upgrade to its enterprise data warehouse (EDW) and business intelligence (BI) capabilities; thus, they needed to develop a current state assessment, an EDW / BI strategy, an implementation roadmap, and a supporting RFP.

Equipped with thorough knowledge about the enterprise, we created a visual view of their enterprise by doing the following.

1. Vertical swim lane columns depict the major divisions of the organization and include the executive leadership of the company at the top.

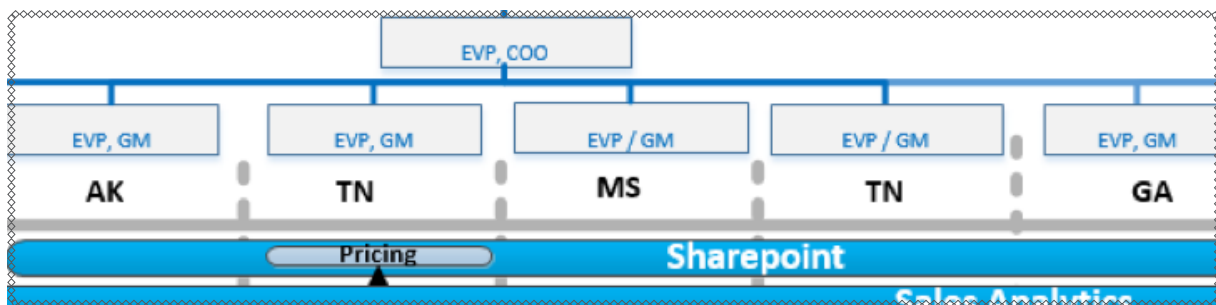


Figure 1: Organizations are shown by role through vertical columns.

While a simple innovation, we find that most enterprise visualizations do not blend the organizational structure with systems and process flows; by placing names on the visual – an organization chart -- we immediately grab the attention of key stakeholders.

Why Our Enterprise Systems Visualization Works (continued)

2. Key systems used by the organization are depicted as simple horizontal bars that span the divisions of the organization.

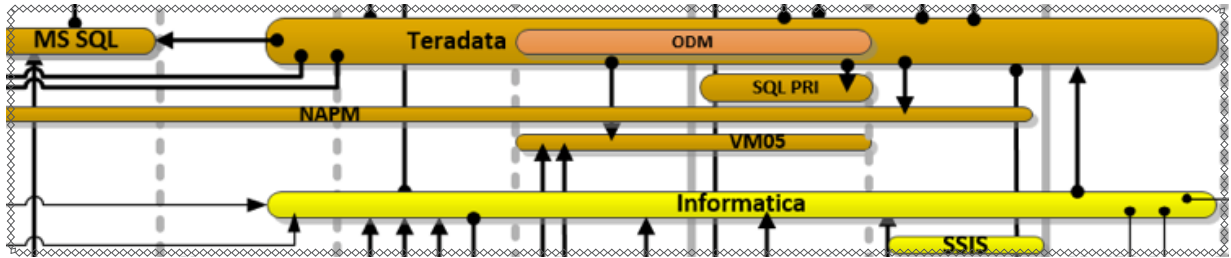


Figure 2: All CPG database systems are colored orange while ETL tools are colored yellow.

In the CPG’s case, the visualization also identified system outliers that are used by single departments but not widely across the enterprise. By identifying system outliers on the visual view, it’s easier to have a conversation about migrating away from the outlier system and to a common platform across multiple departments to reduce costs. Visually depicting this current systems state proved foundational to the executive management team’s understanding of its current situation—and its need for change.

3. Critical business processes across the divisions are shown, and we can now blend systems into the visual view. By organizing the divisions (columns) and systems (horizontal bars) to portray how work flows sequentially across the divisions, systems process flows become evident.

In Figure 3, CPG back office systems, depicted at the bottom, flow through middleware systems in the middle to business intelligence tools at the top to deliver information to executives. We can also depict uni- or bi-directional flows where applicable.

Not every interface is necessarily depicted, and a single connection could represent many interfaces. Where an interface to a single system is not depicted, it can be assumed that data from that system is only available through labor intensive and/or technically difficult efforts.

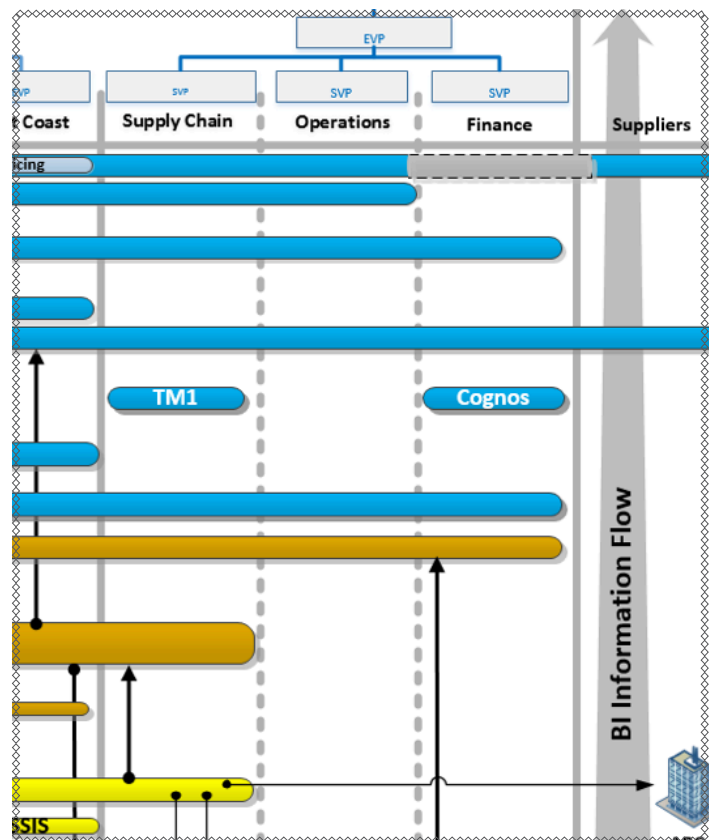
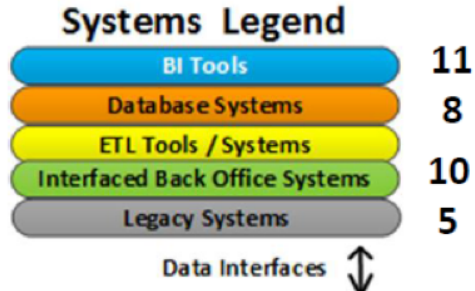


Figure 3: Arrows indicate business intelligence information flows from bottom to top.

Why Our Enterprise Systems Visualization Works (continued)

4. Legends are color coded by system types to simplify the complexity of the visual view. For instance, our CPG example illustrates:

- Interfaced back office systems (green)
- Database systems (orange)
- ETL tools and systems (yellow)
- Business intelligence tools (blue)
- Legacy systems (gray)



Color visually enhances the understanding of systems. For instance, financial systems might be colored green (i.e., money) or e-911 systems might be represented in red to convey the urgency of public safety, etc. For some clients, we have added information to the legends such as counts for each system type, dollar amounts for annual maintenance for each system type, and other data pertinent to the stakeholders.

5. While researching and creating the visualization, we are also able to create a detailed tools inventory of each depicted system. Using a simple application like Microsoft Excel, the tools inventory includes such details as:

- | | |
|---------------------|------------------------------|
| • Number of users | • Application types |
| • Database size | • System maintenance expense |
| • Operating systems | • Planned sunset dates |

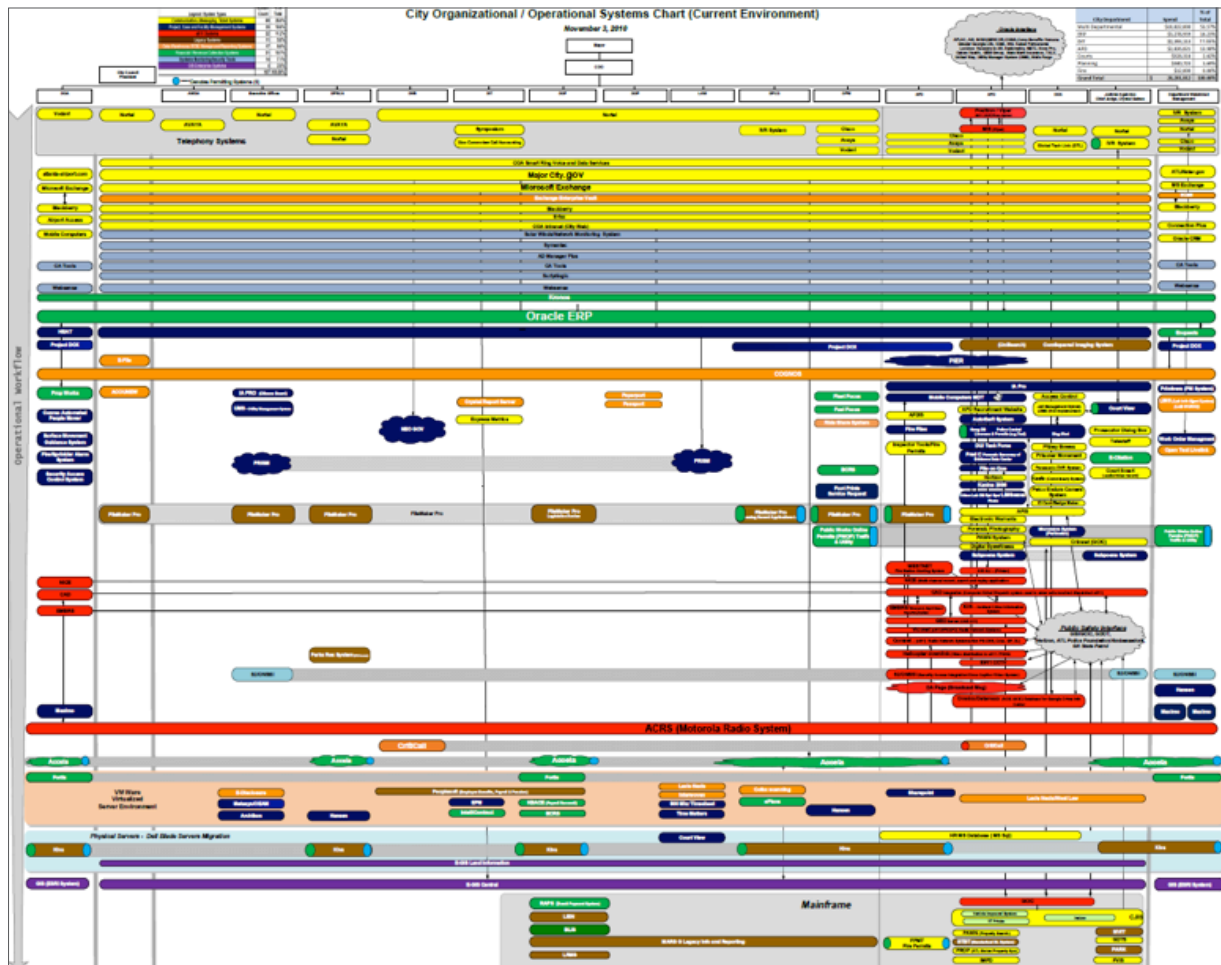
With an accurate inventory that contains such complete information, the Excel sheet (with simple functions such as pivot tables) provides valuable summary information. As the data collected in this inventory spreadsheet grows, it could easily become a starting point for a configuration management database (CMDB) system.

Additional Examples

These examples show our visualizations applied to a variety of organizations. We initially format all visualizations for printing on 11x17 size paper, but when we depict an exceptionally complex system, plotter size paper works better for easy viewing and understanding.

Major Metropolitan American City

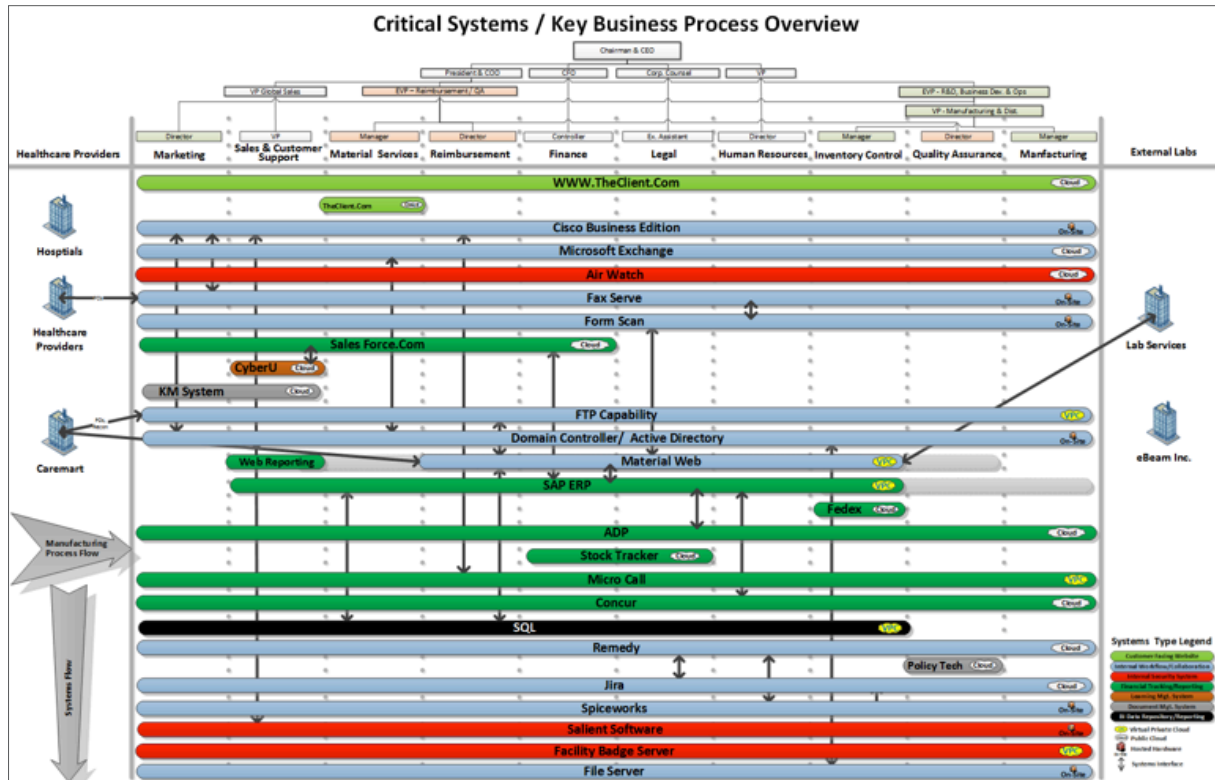
A major American city technology infrastructure complexity had evolved to the point that city leadership found it increasingly difficult to understand. Our visualization helped city leadership understand their technology infrastructure, and begin the consolidation of duplicative systems, and in some cases begin replacing aging systems.



Additional Examples (continued)

Healthcare Products Company

Our visualization served as part of a current state infrastructure and IT operations assessment. Using this process, we were able to identify and communicate the impact of technology (including the absence of appropriate technology) on corporate growth objectives. The visualization allowed the CIO to concisely explain the infrastructure and highlight areas of concern as well as opportunities for improvement.



The Business Benefits of Simple, Usable Visualizations

So, what bottom line benefits do our visualizations produce for enterprises?

- 1. Our visualizations simplify enterprise systems and business process complexity.** Complex systems with significant yet hard-to-understand underlying technologies such as servers, networks, and application modules are depicted as simple colored bars so that even non-technical stakeholders can relate to them. CIOs see the value of such visualization, and they are able to easily communicate that value to others within the enterprise.
- 2. Our visualizations increase organizational understanding and provide a consistent reference point.** Everybody will understand and view the enterprise in the same way. By starting with the current state of an organization and then showing a series of future states, the visualization provides a consistent, standardized way to describe systems usage and coverage across all divisions of an enterprise. Once communicated across the organization, the visualization provides a common understanding and reference point across all personnel groups and types—including a great jumping off point for senior management during future state prototyping activities.
- 3. Our visualizations avoid unnecessary investments in expensive software and tools.** By using low cost, readily available software applications such as Microsoft Visio and Microsoft Excel, we avoid the cost of more expensive infrastructure architecture and business process documentation tools.
- 4. Our visualizations and inventories are easy to maintain over time.** Once developed, it's easy to continue using and updating our Visio visualizations and corresponding Excel tools inventories. They are easily maintained by IT personnel (such as a capable business analyst); maintaining this important information does not require training or the use of specialized, complicated software.
- 5. Our visualizations are built with the sound knowledge of a veteran CIO.** These visualizations are not created by junior-level consultants. With decades of IT leadership that includes roles as CIO, COO, and principal consultant, we have experience leading enterprise IT through Fortune 1000, Big Four consulting, and public sector companies across numerous industries. Seasoned, innovative IT leaders create your visualization. You benefit from well-informed unique information capture and visual mapping methodologies that aid in your enterprise's understanding of your systems and business processes.



Summary / Call to Action

- **Reducing enterprise IT complexity.**
- **Increasing organizational understanding to help with future projects and planning.**
- **Cost-effectively mapping out your entire enterprise's organization, systems, and business processes.**
- **Creating a reference point for both technical and non-technical stakeholders.**
- **Avoiding the costs of expensive visualization software that only a few people will use.**
- **Simplifying your key enterprise systems and related business process while retaining every level of detail needed by technical stakeholders.**

Learn more why organizations spanning many different industries have used our tool to successfully address their enterprise system complexity issues.

Reach out to BCS today at Dan.Smith@BCSInc.org.



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