



BUILDING ANALYTICS CAPACITY IN THE SOCIAL SECTOR





ABOUT THE INSTITUTE FOR VETERANS AND MILITARY FAMILIES AT SYRACUSE UNIVERSITY (IVMF)

The Institute for Veterans and Military Families (IVMF) is the first interdisciplinary national institute in higher education focused on the social, economic, education, and policy issues impacting veterans and their families. Through its professional staff and experts, the IVMF delivers leading programs in career, vocational, and entrepreneurship education and training, while also conducting actionable research, policy analysis, and program evaluations. The IVMF also supports communities through collective impact efforts that enhance delivery and access to services and care. The Institute, supported by a distinguished advisory board, along with public and private partners, is committed to advancing the lives of those who have served in America's armed forces and their families. For more information, visit ivmf.syracuse.edu.



ABOUT SAS

SAS is the leader in analytics. Through innovative software and services, SAS empowers and inspires customers around the world to transform data into intelligence. SAS gives you THE POWER TO KNOW®.

COVER PHOTOS:

Onward to Opportunity-Veteran Career Transition Career Program (O2O-VCTP) 1000th graduate, Joint Base Lewis-McChord (JBLM), Washington; AmericaServes, PAserves-Greater Pittsburgh 2-Year IPR 2017, VetSource, Hampton Roads, VA, September 2017; Entrepreneurship Bootcamp for Veterans (EBV), Syracuse University, July 2017.

The Institute's Entrepreneurial Journey

The Institute for Veterans and Military Families (IVMF), an academic institute of Syracuse University, is atypical relative to the universe of academic centers and institutes situated in higher education. That is, while the mission of the IVMF includes research and policy analysis—what one might expect from an academic institute—the IVMF's mission also extends to the design, development, and delivery of educational and vocational programs positioned to advance the lives of military service members, veterans, and their families.

Today the IVMF's portfolio of career preparation, small business training, and community-based initiatives serve, annually, more than 20,000 veterans, service members, and family members across the globe. The IVMF complements its service delivery with a robust focus on applied research, program evaluation, and data analytics capabilities, resident both within the Institute, and in collaboration with external partners.

Syracuse University launched the IVMF in 2011, under the leadership of Vice Chancellor Dr. Mike Haynie. That said, Syracuse University's journey to launch the IVMF actually has its origins in the institution's long legacy of service to the nation's veterans, which extends back to World War I.

Haynie, himself a veteran of the U.S. Air Force, joined the faculty of Syracuse University's Whitman School of Management as an entrepreneurship professor in 2006. Shortly thereafter, he seized upon the University's historical legacy of service to veterans as the impetus to create a program within the business school designed to help post-9/11 veterans with disabilities successfully pursue small business ownership. That program, called the Entrepreneurship Bootcamp for Veterans with Disabilities (EBV), generated wide interest and demand beyond anyone's expectations—and not just from veterans, but also from other universities, government agencies, and private philanthropy.

Today, the EBV program has evolved and expanded through a consortium of 10 major universities across the United States. Moreover, EBV was the innovation and the impetus for the subsequent creation of the IVMF. In other words, the EBV experience helped Dr. Haynie and others recognize the opportunity for economic and social empowerment that could be conferred to veterans and families by organizing, focusing, and fully leveraging the unique resources and human capital of a top-tier university.

Following its launch in 2011, the IVMF has experienced considerable growth. From a founding team of three employees, today the IVMF counts more than 130 professional staff and students who conduct research and deliver programs across all 50 states and in 9 countries. Because of this growth—alongside a commitment to research, measurement, and evaluation consistent with the Institute's academic origins—the IVMF grew to embrace the imperative for greater capacity to evaluate and understand the efficacy of our work, particularly in the context of our social mission.

To that end, this white paper is the first in a multi-part series, to chronicle the IVMF's evolving journey toward developing and institutionalizing a strategic focus and foundation based in data and data analytics—a foundation that we today understand as being essential to support high-impact social innovations, introduced in service to our nation's veterans and military-connected families.



Participants from Veteran Women Igniting the Spirit of Entrepreneurship (V-WISE), EBV, and O2O-VCTP Program.



Recognizing the Need for a Data Strategy

Like any good nonprofit, in the early years, as the IVMF's initial programs were developing, we established processes to collect program data, survey participants, and communicate what we were learning. For a time this was sufficient. We felt we were doing a reasonable job at managing and evaluating the data we had, and it was largely meeting our reporting needs.

More recently, the IVMF invested in a customer relationship management (CRM) database to track participants across our programs. However, our staff primarily used the CRM for operational purposes rather than for analytics. As IVMF's program offerings grew and changed, we incrementally developed new functionality and capacity into the CRM to account for each program's unique needs. A consequence of this piecemeal approach to build out a CRM structure was that each program's design and use of data fields varied, often significantly.

Also, as IVMF operations scaled further, we saw an opportunity to gain greater efficiency through shared services of some common functions across our programs. For example, enrollment and advising activities, which had been provided by each program, were consolidated into an enterprise Enrollment Services team. Once united, this combined team had to learn the nuances of each program's operations and data to assist participants across all our programs effectively. In doing so, the newly formed enrollment services team's daily processes became increasingly complex.

This complexity grew even further when we aligned two of our largest career-skilling programs, Onward to Opportunity (O2O) and the Veterans Career Transition Program (VCTP). The two programs became closely aligned from a management and marketing standpoint; however, some processes and data were still maintained separately due to considerable underlying differences in their setup and design in the CRM.

In the midst of these ongoing organizational changes, the IVMF's programs were also expanding on a national scale. This drove increasing reporting requirements and demand for expanded analytics capabilities and efficiency. Although our CRM platform was well-suited to generate programmatic outputs, at the time, we had limited documented processes and misaligned data structures. With an ever rising volume and frequency of reporting demands, we knew we needed to find better, more efficient, ways to operate. We had little choice but to solve our most complicated reporting needs through advanced programming—code—and more sophisticated analytics tools.

Fortunately, SAS® software was readily available at Syracuse University. Importing our CRM data and other relevant datasets into SAS and processing them with code—thousands of lines of code, in some cases—took a significant, up-front time investment of the IVMF's new measurement and evaluation team. But it paid off in spades. This effort truly allowed us to climb out of the data collection and reporting challenge in which we found ourselves. Using Base SAS® we were able to take a leap forward with program measurement.

However, despite resolving these immediate challenges, our analytics team soon realized an even larger set of obstacles that confronted us. Most critically, we still needed an overarching data strategy and a unified approach to integrating the Institute's data as a whole.



V-WISE Louisville, Kentucky, 2017.



O2O-VCTP, Onward to Your Career at Fort Bragg, North Carolina, 2017.



IVMF leadership visits SAS in Cary, North Carolina, December 2017.

Telling Stories and Communicating Impact Through Data

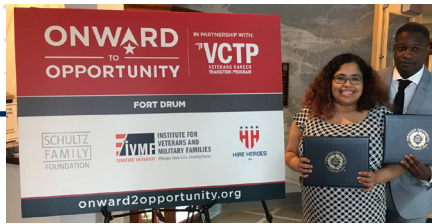
As the IVMF's programs evolved and grew, so did our research and evaluation portfolio. IVMF leadership recognized, early on, the virtuous relationship between research and direct program and service delivery—that research can improve program delivery, and in turn, direct service delivery experience can inform new research questions. For this reason, we increasingly sought to study topics and collect public and original data that aligns with and would advance IVMF program delivery, as well as the broader practices and policies supporting America's military-connected community. We built out an extended bench of research fellows and affiliated research associates and stood up project teams to tackle topics such as veteran and military spouse employment; entrepreneurship and small business ownership; nonprofit and business leading practices; higher education, and more.

Additionally, we grew our measurement and evaluation team to support not only the additional reporting requirements, but to provide data-driven insights to key programs. As demands on the research and evaluation team increased, so did the urgency for us to figure out how to deliver greater insights and tell more compelling stories with our data. Naturally, we started looking at data visualization capabilities. We also initiated an internal, and still ongoing, process to move the Institute beyond monitoring basic input, process, and output measures—to truly understanding outcomes and key performance drivers within our programs and across the enterprise (i.e., business intelligence).

One consistent point of pride at the IVMF has been our ability to be a trusted source of information for a diverse set of stakeholders and audiences, internally and externally, working to serve veterans and military families. Our applied research team receives a constant stream of external requests for statistics and insights from public and original data sources. Likewise, the evaluation team is constantly inundated with requests for information from both internal program staff and external partners.

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O2O-VCTP graduation, Fort Drum, New York, 2017; Syracuse University Army and Air Force ROTC.

LEVERAGING THE STRENGTHS OF A UNIVERSITY CAMPUS

Each organization and company has their own unique challenges and opportunities. There are a couple of unique opportunities that we have been able to capitalize on.

The IVMF is physically located on the Syracuse University campus, making it easily accessible by students and a desirable place to work. Our staff have pioneered relationships with professors to set up pipelines for placement for student projects and internships. Professors regularly refer their best and brightest students to us. The competitive student pay and the breadth and depth of work opportunities make the IVMF a very attractive place to students.

In fact, most of our early work with data management was driven by Information Management graduate students. Truly capitalizing on the student talent has enriched and catalyzed our movement toward greater information maturity.

We also benefit from access to software owned or managed by the University. Access to technology and an internal IT team that supports the use of technology has nurtured in us a culture of exploration and adaptability. Staff are accustomed to learning new software and they are willing to do what it takes to get the job done well.

From this, we soon recognized that our data was a valuable asset that we needed to nurture, and that well-designed visualizations could be a huge asset to our stakeholders. In particular, we realized that we needed to become experts at building and designing dashboards for both public and internal consumption. As a result, we invested in increasing our capacity to ask new and interesting questions of both public and proprietary data, and in our ability to present our findings externally in formats that were both aesthetically engaging and easily consumable for general audiences.

As our measurement and evaluation capacity increased, we also wanted and needed process measures and outcomes to evaluate program success. We needed to understand success not only within each of our program portfolios, but across the Institute at large. The research and evaluation team undertook a significant effort to develop an enterprise-wide suite of success measures centered on the Balanced Scorecard.¹

In effect, we had reached a point where we had a sense of our inputs, outputs, and results, and we were fairly self-reflective. So, how difficult could it be to regularly review our key performance indicators across the IVMF's programs, research, and operations? As it turns out, rather difficult.

At the start of the summer of 2017, we hired a graduate student in information management from Syracuse University's School of Information Studies to diagram all of the sources and uses of data across the Institute. We hoped that this question—*how hard can it truly be to gather and view our own data?*—would be met with a reasonably simple answer. In fact, the humbling reality of how many spreadsheets, databases, web-based software systems, and other homegrown tools we had supporting all levels and aspects of our work was staggering.

We were surviving at best—meeting short-term reporting needs using various Microsoft Access and SQL databases, maintaining Excel files on our local computers, and managing data in programmatic and departmental silos. Yet, this process of introspection and honest assessment clarified what specific data we possessed and the extent to which it related within and across these silos. This exercise also improved our ability to articulate the Institute's data management strengths and weaknesses, and opened our eyes to what data inefficiency meant to our organization in practice.

With dozens of disparate sources of information that were continually changing and growing, we knew it wouldn't be resource-effective to create sustainable dashboards with our key performance indicators. Without the ability to centrally maintain and analyze operational data in conjunction with program outcome data, there was little we could do to operationalize these efforts.

As an organization that has always been rooted in solving problems, seeking evidence, and learning from our successes and mistakes, we have always felt that we value data as a tool to help us achieve our vision and improve our work. But the deceptively simple desire for a consolidated data tool taught us an important lesson: *appreciating data*—even measuring our work and using the resulting data—is not the same as building the appropriate systems to support a data-driven culture. We may have had an approach to program measurement, *but we needed a data strategy.*

¹ Kaplan, R.S., & Norton, D.P. (1996). *The balanced scorecard: translating strategy into action*. Harvard Business Press.

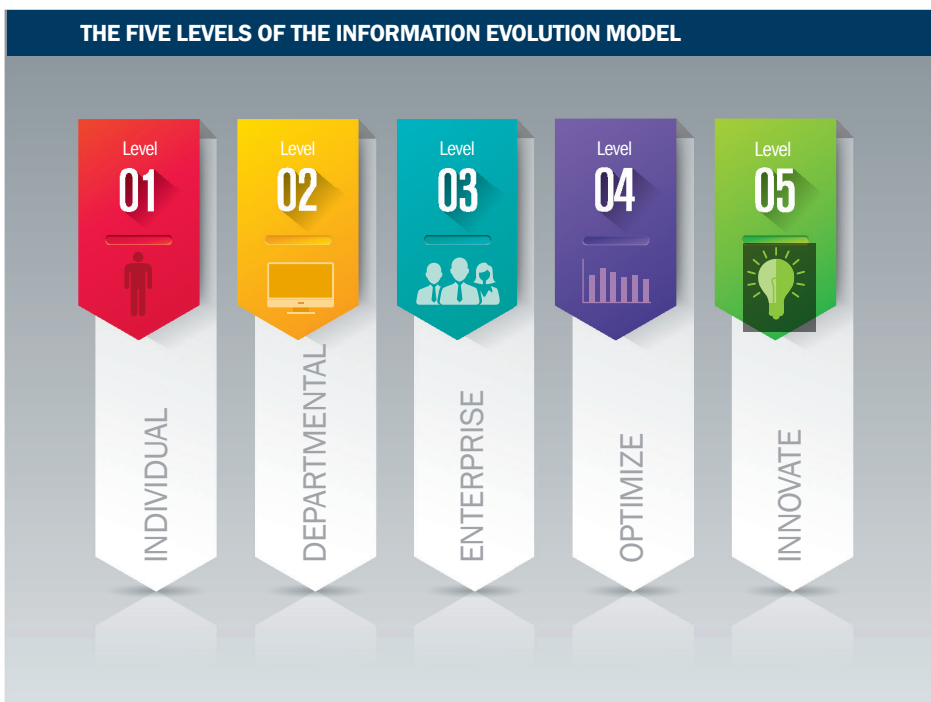


Self-Reflection on our Data and Analytics Maturity

We have been fortunate to attract amazing and wonderful corporate partners to strengthen the work we're doing for veterans and military families. Our collaboration with SAS is no exception and has increasingly been able to complement nearly all aspects of IVMF's programs, research, and operations. Initially, SAS was looking to offer its training and certification opportunities to transitioning service members through the IVMF's career-skilling programs. Likewise, we were seeking assistance with advanced data analysis and data management. To date, we have incorporated SAS training into our career and transition programing (the O2O-VCTP program) for transitioning service members, veterans, and military spouses. SAS provided in-kind software for data management, data analytics and data visualization, alongside the training and assistance needed to utilize these solutions effectively. Thus far, this engagement has been instrumental in enlightening the IVMF team, on all levels, on the core concepts and principles of data strategy and best practices in data management. Essentially, the SAS relationship has both taught us that there is much more to organizational information maturity than we realized and has uniquely positioned us to progress toward maturity.

The Director of SAS Global Business Consulting, Aiman Zeid, authored the book, *Business Transformation: A Roadmap for Maximizing Organization Insights*,² in which he describes SAS' Information Evolution Model and how organizations can improve. He presents five levels of organization maturity in this model: Individual, Departmental, Enterprise, Optimize, and Innovate. Attainment of each new maturity level requires

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² Zeid, A. (2014). *Business Transformation: A Roadmap for Maximizing Organizational Insights*. Cary, North Carolina: SAS Institute Inc.

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EARLY LESSONS LEARNED ON MEASUREMENT, EVALUATION, AND DATA ANALYTICS.

- 1 Having a theory of change is priority #1.** Going through the disciplined exercise—program by program and organization-wide—of regularly evaluating our programs’ theories of change has had many benefits. Theories of change:
 - Equip all members of the program to speak a common language about the program’s purpose and impact;
 - Help everyone come to terms about what matters and reduce confusion about the relative importance of key performance measures; and
 - Ensure that the program stays centered on its mission amid competing pressures and distractions.
- 2 Don’t be shortsighted about data collection and management practice.** Beware—everybody wants a dashboard or data visualization. They are shiny objects. Stakeholders are hungry to consume data, and most see data visualizations and dashboards as the desired solution to generate insight. This may not always be the case. Remember:
 - (See #1!) Don’t lose sight of the fundamentals and knowing what truly matters, what questions you need to ask of your programs or operations, and understanding what data will answer those questions.
 - Data collection must be thoughtful and purposeful. It should be managed in such a way that will allow for longitudinal tracking of key measures over time. This is not just about tracking individual client outcomes, for example. It is also about having the ability to calculate measures as rates and other changes over time, rather than raw counts and percentages. This may require more upfront data preparation and analysis work than anticipated.
- 3 There’s more to a data strategy than you might think.** Take the time to understand what data strategy is and means. While there is much more to developing and implementing one, some of our key observations up to this point include:
 - A strategy is more than simply increasing reporting efficiency.
 - Data shouldn’t have gate keepers.
 - Data should be accessible, yet secure.
 - Data documentation and policies are part and parcel of good data management practice.
 - It is possible to integrate disparate data.
- 4 Data management is about trust.** Getting data management right is as much about cost saving, efficiency, learning, and continuous improvement as it is about building trust with our partners, funders, and those we serve.
- 5 Data is a strategic asset.** Data is a strategic asset, and it should be managed and treated as such. This encompasses how we prioritize our hiring, our technology use, our ability to access and use data, and our documentation and maintenance.

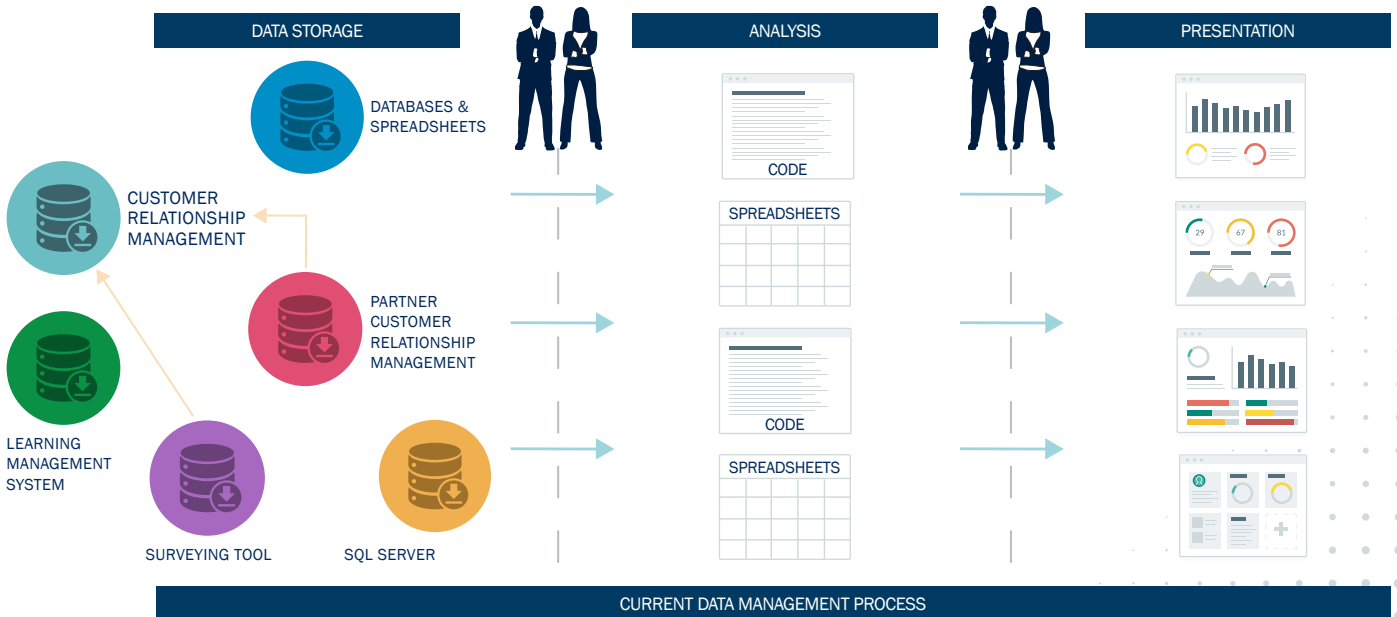


fundamental improvements across the organizational pillars of people, process, technology, and culture.

Organizations that are at the Individual level get along one day at a time, unable to truly forward-think about their data. Technologically, Individual level organizations have people who choose their preferred tools to get the job done, because tools and standards are not integrated across the enterprise. At this level, processes are not well defined across the enterprise, and there are no formal processes for continuous improvement. People act as subject matter experts and data gatekeepers rather than creative collaborators, because obtaining the data is too difficult and nuanced for others to participate.

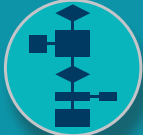

In a way, it is remarkable that with all of the improvements we have made in our ability to manage and analyze our data, we still remain toward the bottom of the Information Evolution Model. Culturally, we strive to innovate; in fact, innovation has been a fundamental principle and unifying thread across the Institute. In practice, however, the lack of processes and proper data support systems typically means we end up defaulting to reactive behaviors in response to new ideas. At the same time, the Institute deeply values thoughtful and serious reflection, and is committed to sharing what we learn with others serving those who served and beyond. Shifting how we think about our data—as not merely a tool but an asset that could allow us to become creative collaborators—is now critical to how we view our path toward institutional excellence.

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Our Road Ahead

Zeid makes clear: An organization’s ability to mature rests across the four pillars of people, process, technology, and culture. Without growth across all four areas, our progress will be uneven and limited in scope. As we embark on our journey to organizational maturity in the coming months and years, we intend to leverage strengths we have in each pillar.

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|--|--|---|--|
| PEOPLE | PROCESS | TECHNOLOGY | CULTURE |
| <p>Despite resource constraints, we are able to attract and retain the right people with the skill sets to match organizational needs. Training and educational opportunities are abundant as many IVMF employees take advantage of the educational benefits being a Syracuse University employee affords. We recently committed to hire a data architect in light of our apparent information management needs.</p> | <p>Unlike large global firms with employees in the tens of thousands, we are a small, nimble, and relatively simple organization. Instituting process change is not a daunting effort. Changing and establishing processes are not easy, but even with a professional staff of just over 100, training and education can be done quickly. The challenges arise with nationally dispersed staff and the fast moving and changing environment of scaling programs.</p> | <p>We would not be in a position to tackle our information management challenges were it not for our collaboration with SAS. With SAS software, we now have the tools we were lacking to integrate and manage our data. We’re extremely fortunate to benefit from the information technology available at Syracuse University, but of what it was lacking, SAS has since made up for many times over.</p> | <p>We have a culture that is quick to learn and is performance driven. We take risks, we learn from our mistakes, we are open to new ideas, we strive for the best, we love working with likeminded partners, we focused on delivering maximal impact, and we’ll work as hard as it takes to get the job done. These characteristics will serve us well as we seek to elevate the management of our data as the strategic asset that it is. This endeavor has the full executive leadership sponsorship and support.</p> |

From our first program offering, to the growth and scaling of our national programs, we have endeavored to provide veterans and their families the best possible services. Yet, at least initially, we did not fully appreciate that the data we so carefully maintained was a strategic asset that could be utilized powerfully to advance our mission. Through our collaboration with SAS, we have since evolved our thinking to embrace the need for a data strategy and to align resources to manage our data as the asset we know it to be.

Our first step has been to invest in people with the technical skills and vision to make strategic decisions and implement a data management strategy. As we build out our enterprise data structure, processes, and governance, we will continue to develop and refine data visualizations and dashboards to deliver immediate value to our end users. In addition, to succeed in meeting the diverse and rapidly evolving needs of the IVMF, we aim to establish a cross-functional business intelligence team to lead the Institute in our journey to greater maturity in our use of data. With the building blocks firmly in place, and the leadership and resources to move forward, we are excited to undertake new challenges as we propel the IVMF on its path to organizational maturity.

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