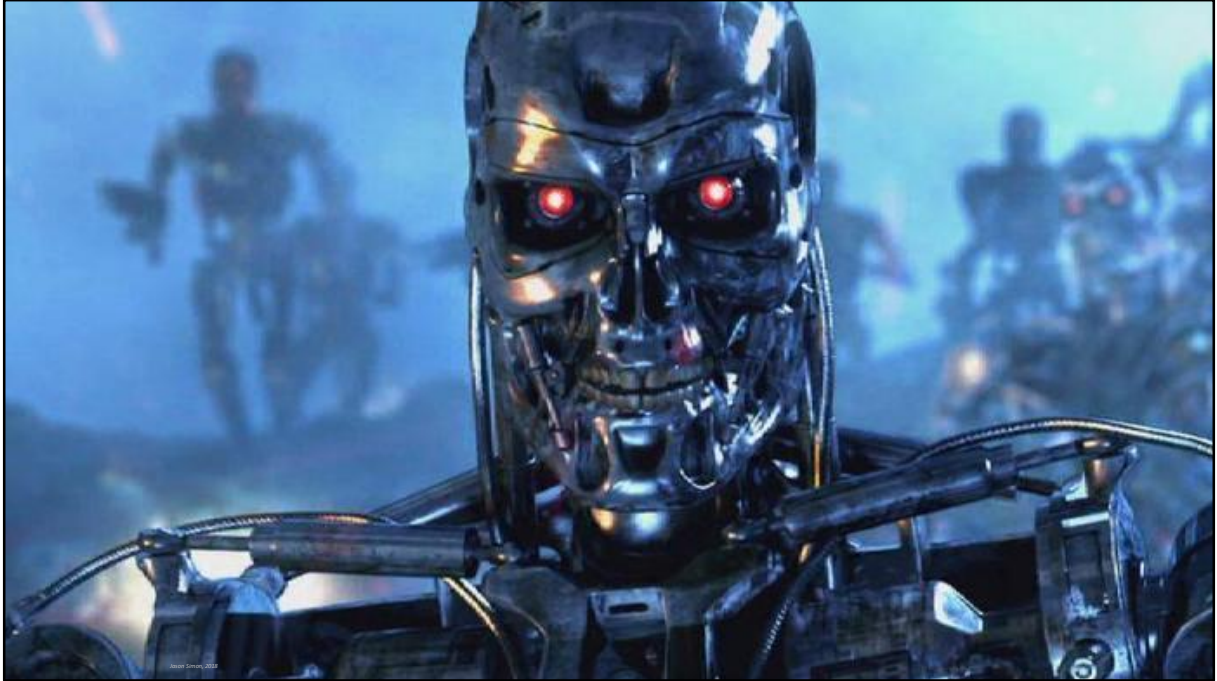**MORE ABOUT...**

Highlights about UNT – Size, Enrollment, Location Carnegie Tier 1 – approaching MSI/HSI

When we think about technology and the future we typically fall into large categories – those who think about the future with optimism….

And those with despair…and the rise of the machine.

I believe that each of us as an IR professional has the ability to help evolve how we approach data. I like these two quotes from author Peter Drucker and I believe they represent the need for courage and careful planning.

We'll give you a moment to read some of these recent headlines…
- The headline that sticks out to me the most is "how enrollment challenges can spur change"
- Part of the rationale for developments in data warehousing and analytics involves the need to gain competitive advantage over peers to attract students
- We're currently developing analytics that drill down into enrollment trends like we've never done before
- So, in addition to examining overall trends, we're also looking at patterns by academic college, recruitment zone, and by demographic characteristics
- The emphasis on recruiting new students and retaining the ones we have is a large part of the driving force behind our evolving landscape

Meeting the Challenge of Demographic Change

Not Coddling but Learning

Does College Prepare Students For The Real World?

College of Tomorrow: The Changing Demographics of the Student Body

The 'traditional' college student - young, white, male, wealthy - is a thing of the past.
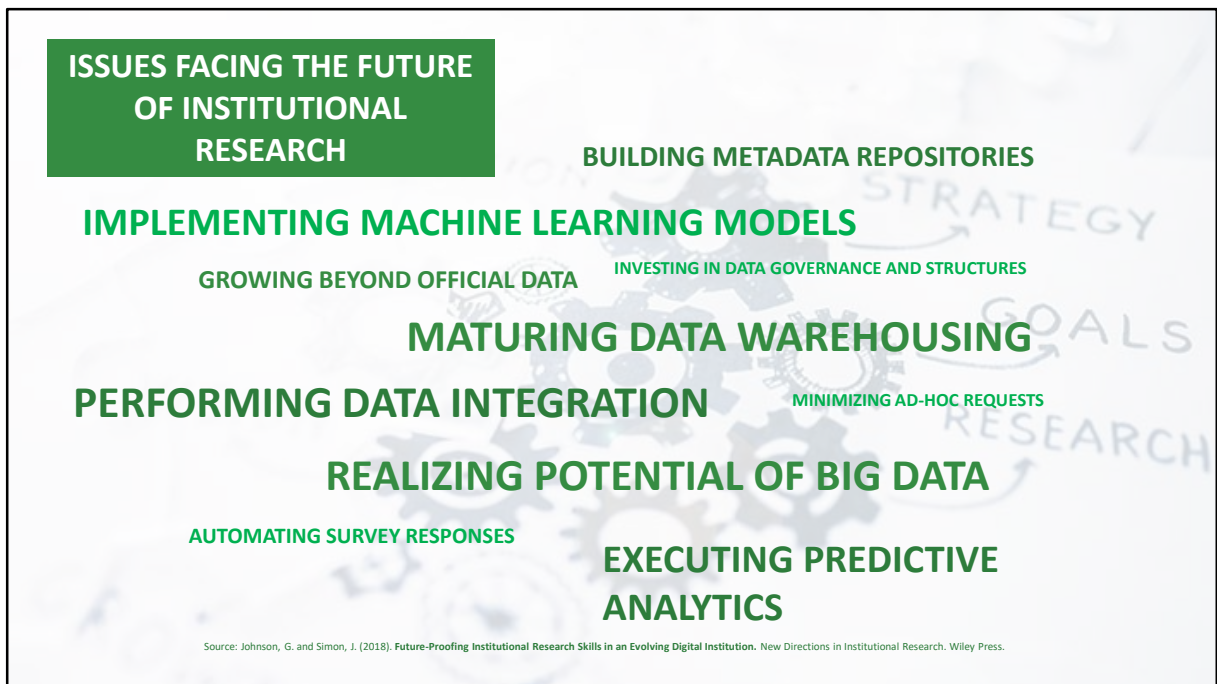
Higher education is headed for a supply and demand crisis

Are colleges preparing students for the automated future of work?

What Does the College Classroom of the Future Look Like?

Jason Simon, 2018

We'll give you a moment to read some of these recent headlines…
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ISSUES FACING THE FUTURE OF INSTITUTIONAL RESEARCH

BUILDING METADATA REPOSITORIES

IMPLEMENTING MACHINE LEARNING MODELS

GROWING BEYOND OFFICIAL DATA   INVESTING IN DATA GOVERNANCE AND STRUCTURES

MATURING DATA WAREHOUSING

PERFORMING DATA INTEGRATION   MINIMIZING AD-HOC REQUESTS

REALIZING POTENTIAL OF BIG DATA

AUTOMATING SURVEY RESPONSES

EXECUTING PREDICTIVE ANALYTICS

Source: Johnson, G. and Simon, J. (2018). **Future-Proofing Institutional Research Skills in an Evolving Digital Institution.** New Directions in Institutional Research. Wiley Press.

Gina Johnson and I developed the content for this slide as part of a NDIR chapter on future proofing our field.

Look at the issues that were identified by IR practitioners and leaders from our field.

Pay attention to the pain points around machine learning, data warehousing, executing predictive analytics. These will all be challenges for our future.

ISSUES FACING THE FUTURE OF INFORMATION TECHNOLOGY

PUTTING STUDENT SUCCESS AT THE FOREFRONT

DEMONSTRATING CHANGE LEADERSHIP

IMPLEMENTING A RISK-BASED SECURITY STRATEGY

OFFERING OR INITIATING CLOUD BASED STORAGE

BALANCING AND RIGHT-SIZING IT RESOURCES AND TOOLS

ENSURING DIGITAL INTEGRATION PLATFORMS

INCREASING ACCESS WHILE MAINTAINING SECURITY

ENSURING DATA MANAGEMENT

PRIORITIZING RESOURCE ALLOCATION

Source: Eduventures Top 10 2018 https://www.educause.edu/~/media/files/educause/research/2017/top10itissues2017.pdf?la=en

Educause released their annual list of issue facing IT organizations.
Note many of the areas where IT crosses over into IR efforts and vice versa.
As part of this new data landscape I am calling for a new collaborative relationship between IR and IT.
If we are to transition to the future we need allies in this work – but what might the future of higher education look like?

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Here is how one scholar views the future classroom.
This doesn't even begin to capture online learning.\

LIBRARIES

Libraries are shifting stacks are being replaced with terminals and quiet study cubes are being shifted out for collaborations spaces.

RECREATION CENTERS

How about virtual reality rec centers? How is analytics and data changing the way we interact with technology, VR, the new Mirror technology, etc. are all changing how we interact with our spaces.

ADMISSIONS

Suspect
Prospect
Applicant
Matriculate
Graduate
Donor

Source: Elson, S. via https://chatbotslife.com/machine-learning-if-its-testable-it-s-teachable-48cb47ff16e0

Think about the vast amount of change occurring in Admissions. The rise of Machine Learning, automated scoring, predictive applicant scoring, etc. are all creating new challenges and opportunities.

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IR, BI & ANALYTICS – OH MY!

Going one step further, how about our relationship to data, business intelligence, and other pressures on our data landscape.

We knew at UNT that we needed to get ahead of this and position ourselves to think about the future of data landscape and IR differently.

UNT Data Landscape 2015: Pre-Insights Program

This is how we characterize our data landscape prior to beginning this effort.
UNT was buried under the weight of it's own data. We were overgrown and without any order.
In essence we were data rich but information poor.
Our president wanted a new reality and we began working hard to create a new data landscape.
He charged us with not catching up to others but to leapfrog ahead.

UNT Data Landscape 2025: Post-Insights Program

Our vision (and his) was to live in harmony with our data.
To use it to help us achieve goals that allowed us to know where and how to use what forms of information resources.
We wanted to let data grow in logical areas and not let it consume us again. In short we knew we needed basic building blocks to be successful.
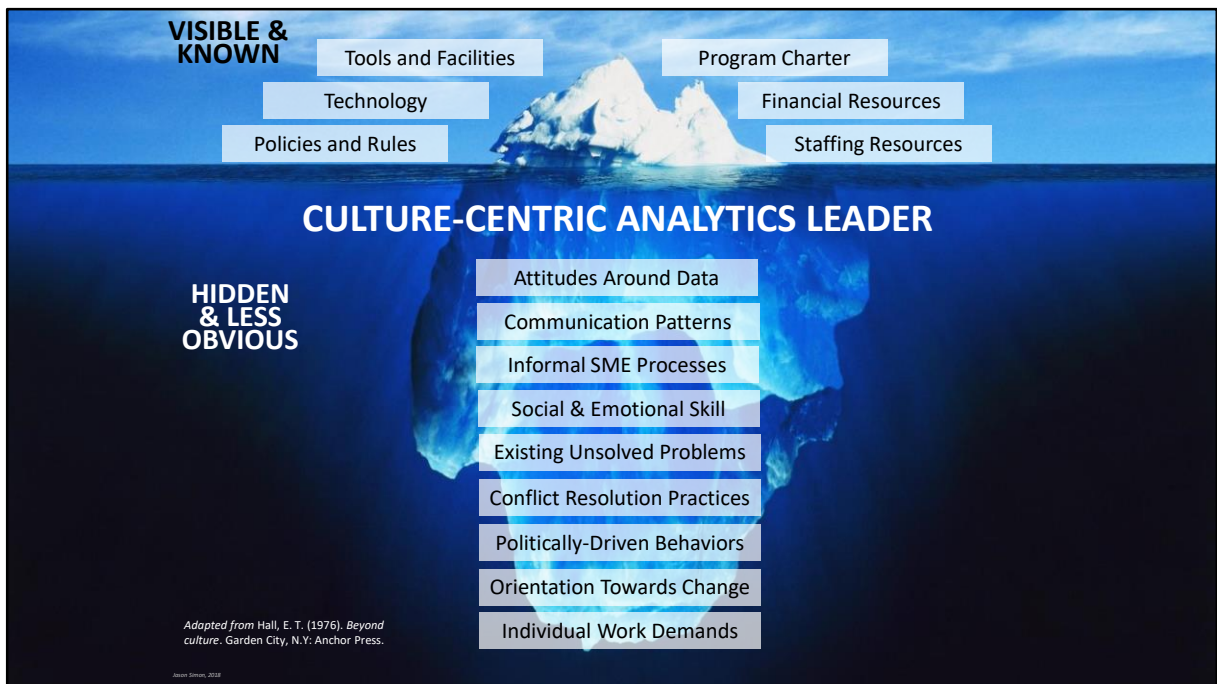
UNT Data Landscape: Progress Thus Far

So we began the tough work of putting in a new way of doing data at the Institution.
The next few slides provide you with a glimpse into what and how we achieved this goal.
We deliberately leveraged campus culture as a tool for success.
All too often campuses only prioritize the tools or technologies – we wanted to focus on people, culture, and capabilities as well.

University and College Data Landscapes Are Changing

- This is challenge we were up against. Our executives want the landscape on the right but often prioritize resources to produce the garden on the left.
- The most recent ACE Survey of Presidents demonstrates this point given so many presidents were eager to say they wanted data to make better decision but a dramatically smaller percentage actually prioritized funding to do so.
- Information is coming at IR so fast from so many directions, new systems are coming online and EVERYONE wants reporting…
- Here is where the Insights Program really began to help

VISIBLE & KNOWN

Tools and Facilities

Program Charter

Technology

Financial Resources

Policies and Rules

Staffing Resources

CULTURE-CENTRIC ANALYTICS LEADER

HIDDEN & LESS OBVIOUS

Attitudes Around Data

Communication Patterns

Informal SME Processes

Social & Emotional Skill

Existing Unsolved Problems

Conflict Resolution Practices

Politically-Driven Behaviors

Orientation Towards Change

Individual Work Demands

Adapted from Hall, E. T. (1976). *Beyond culture*. Garden City, N.Y: Anchor Press.

Jason Simon, 2018

So what it does it take to be successful? I urge our field and you to think differently about becoming a culture-centric analytics leader.

We do have things that are visible and known – namely these six areas.

But we also have invisible, hidden and less obvious attributes which contribute to someone being an effective culture-centric leader.

We must focus on these too and as they impact our effort we must recognize they are worthy of our time.
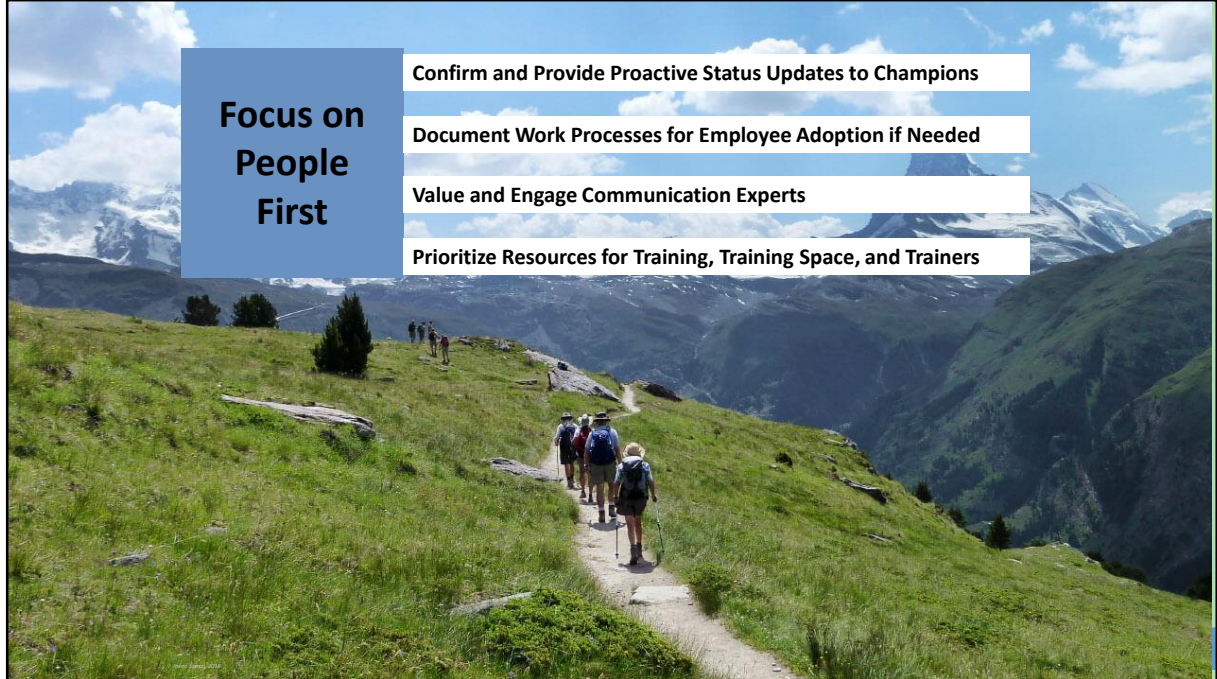
Focus on People First

Develop A Master Plan

Inculcate a Culture of Data Governance

Engage Today While Thinking About The Future

Anticipate Challenges and Prepare Solutions

Demonstrate a Culture of Value and Impact

Key Strategic Areas the University of North Texas Used to Impact Data Culture

Jason Simon, 2018

UNT leveraged six key strategies which we will now go through to help us fundamentally shift our data culture.

We knew we had failed at three previous data warehousing efforts and no one would tolerate a fourth failure.

We recognized that we needed to leverage our culture-centric leadership philosophy and look past just the tools or technologies.

Each of these six strategies would help us ensure that we not only succeeded but also shifted expectations and culture around our work.

Focus on People First

- Confirm and Provide Proactive Status Updates to Champions
- Document Work Processes for Employee Adoption if Needed
- Value and Engage Communication Experts
- Prioritize Resources for Training, Training Space, and Trainers

Focus on People – clearly our institutions and offices are made up of a collection of individuals. We knew we needed specific strategies to help individuals adopt, adapt, and evolve around data.

This took some conventional and uncongenial turns.

Review each step above.

Develop A Master Plan

- Articulate Resource Needs and Staffing Models
- Develop an Evidence-Based Program Roadmap
- Conduct Stakeholder Interviews and Develop a RACI Matrix
- Have The Final Data Products In Mind

Jason Simon, 2018

Prioritizing the need to develop a master plan cannot be understated.
Skipping this step will put your program behind at best and doom your effort at worst.
Review each step above.
Pay special attention to RACI, and Resource Models.

Inculcate a Culture of Data Governance

Establish Data Governance Protocols and Timelines

Explain Why Leaders Should Trust Data Governance Efforts

Deconstruct Data Governance into Key Components and Train

Govern and Define Data Before Visualization

Jason Simon, 2018

 Data Governance was the hidden strength of our effort and a major reason we succeeded.
It is not enough to make data "pretty" we must also ensure data are "trusted" and a common definition is well understood.
Share how at UNT we would get three answers to the same question depending on who was asked and when.
Review each strategy above.
Ultimately, UNT needed a new way of approaching governance.

Data Governance Building Blocks

Source: Hubbard, D. and Simon, J.F. (2018) University of North Texas
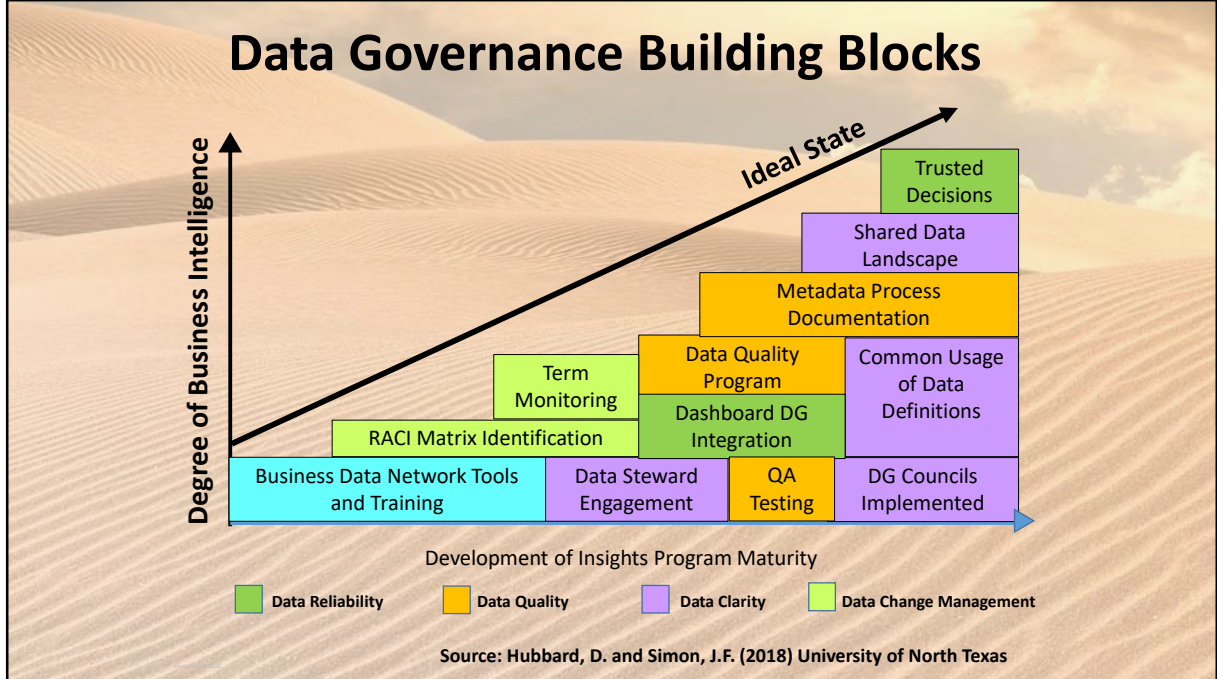
Every time we mentioned Data governance at UNT our executives would urge us right away to form a council or committee.

We believe this is fundamentally WRONG.

IR if is to be successful at Data Governance needs to assemble a host of strategies to achieve the ideal state of trusted decisions.

Talk briefly about each building block.

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Engage Today While Thinking About The Future

- Build Adoption by Executives Via Concierge Service
- Ensure Systems are Aligned and Tested With Key Partners
- Launch New Data Products to Influence Decision Making
- Recognize and Anticipate Executive Stressors and Respond

IR cannot be complacent about this work. We must also be sure to recognize where our users are and how we can help promote adoption.

We also knew that previous experiences with data would cloud how our campus community viewed our efforts.

We knew we had to be focused on our future and our vision for where we needed to go.

We also had to proactively recognize cultural resistance and roadblocks for success.

Review the four steps/

Anticipate Challenges And Prepare Solutions

Manage and Monitor Expectations with Intentionality

Re-Enforce Users Can Learn and Grow as Program Matures

Hand Hold Executives Until They are Comfortable

Develop Individualized Plans to Engage Tech Resistant Users

A culture centric leader must think about future challenges before they occur and have sound plans in place to mitigate these risks.
UNT knew that we needed to focus on the entire spectrum of technology users, the laggards, the early adopters, and the unwilling.
We needed solutions that required creativity.
Review the strategies above.

Demonstrate a Culture of Value and Impact

Measure Outcomes Against Original Program Charter Goals

Provide Positive Stories for Executives to Evangelize

Highlight Real-Time Decision Making Capabilities

Reflect Internally and Assess Next Steps

 I often argue that analytics is an investment not an expense.

We know that during times of scarce resources analytic costs can be scary for decision makers.

UNT needed to leverage strategies and solutions to help convert this mindset to one of ROI and investment.

A common metric in analytics and data science is lift. Lift is the amount of return or improvement one might expect as a result of a data informed strategy.

UNT knew we couldn't get to this concept until we demonstrated a culture of analytic value.

Review four tasks above.

UNT Experience: A Deeper Cut Into Our Program

Now that I have explained some of the strategies we utilized let's look deeper into our program at UNT.
We are slowly clearing the fields and results are beginning to emerge.

UNT Insights Program is Composed of 5 Distinct Tracks of Work
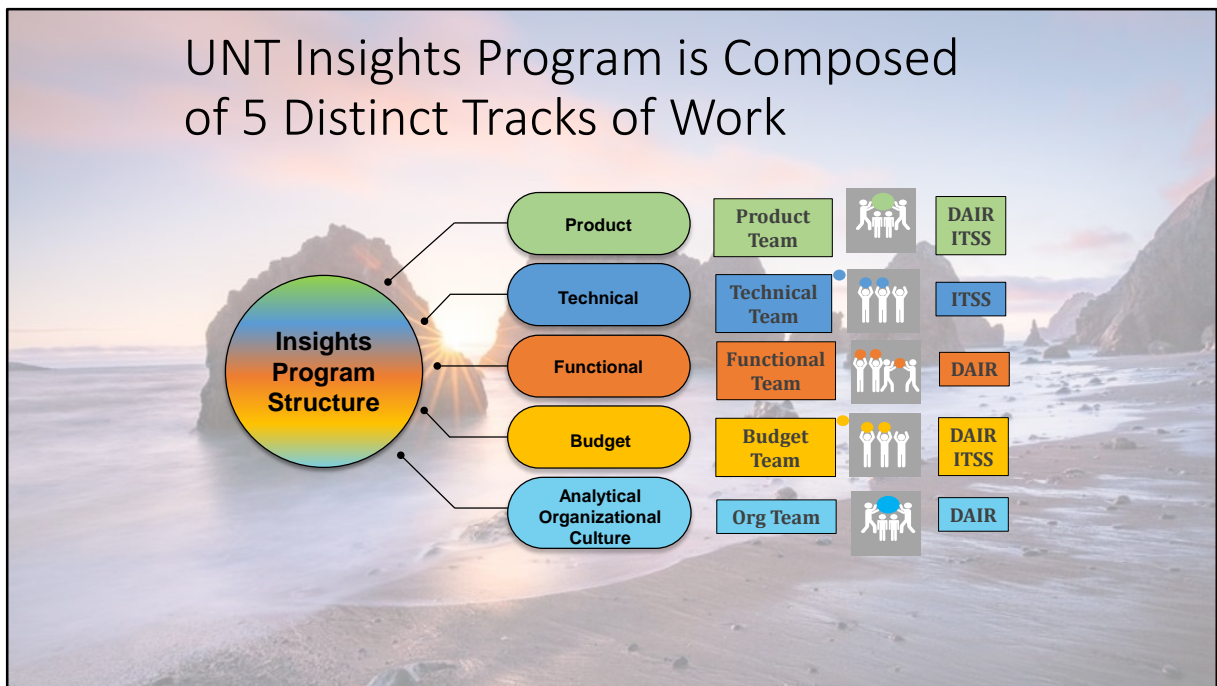
The Insights program is unique in that it is a true collaboration between IT, IR, and multiple divisions at the institution.

Each unit plays their role accordingly and boundaries are clear.

Effort was made to ensure open, transparent, and collaborative lines of communication.

This allowed our IR unit to focus on what we do best, and allot the other units to focus on what they do best.

You will notice that if you miss one piece of this equation your results may be impacted.

Clarity was very helpful for us as we innovated.

From Strategic Need to Data Informed Impact
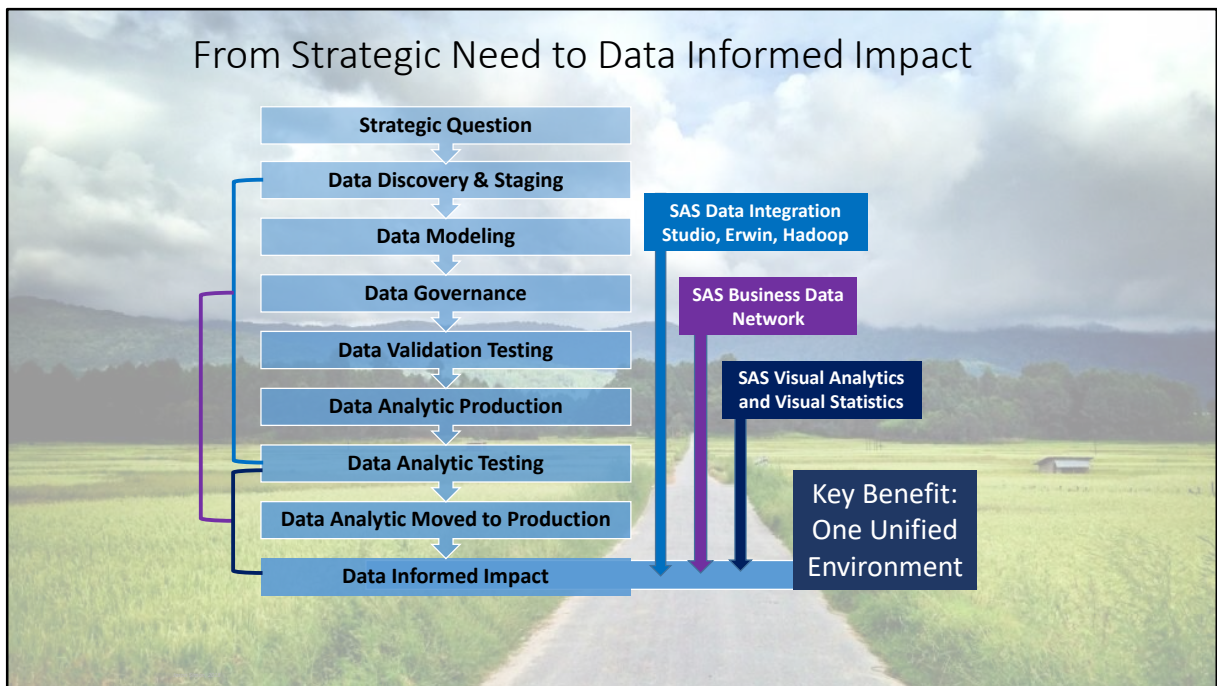
Far too often executives just ask for a new report.
IR has lived in a world where we are very reactive.
Our effort at UNT was designed to be proactive.
We shifted the conversation away from FYI to KPI.
Our process always begins with a strategic question.
Review Steps above and stress unified environment.

UNT Analytic Progress Since Summer 2017

Student & Academic Data	Finance	External Data	Institutional Performance
• Demographics • FTIC Retention • Transfer Retention • All Student Retention • Grade Distributions • Degrees • Enrollment Comparisons • Select Student Metrics • Card Swipe Data	• Select Institutional Finance Metrics • Optimal Bus Route Data Explorations • Comprehensive UNT Payroll Analysis for Three Fiscal Years • Student Accounting (dev) • Financial Aid (dev)	• Select Peer Metrics – Federal IPEDS Data • Texas Higher Education Coordinating Board Almanac Data • National Student Clearinghouse Admissions Data Looking At Accepted Students Who Enrolled Elsewhere	• Select Research, Advancement, and Faculty Metrics • Strategic Goals Dashboard Monitoring

Training Program and Security Protocols Established

Business Data Network, Data Integration Studio, and ServiceNow Request Process Implemented

As you can see the team has truly crossed into numerous data domains.
You will also note that training, security, and communication protocols are in place.
Explain briefly BDN, DIS, and ServieNow.
Indicate a transition to actual tools/

Specific UNT Analytic Products
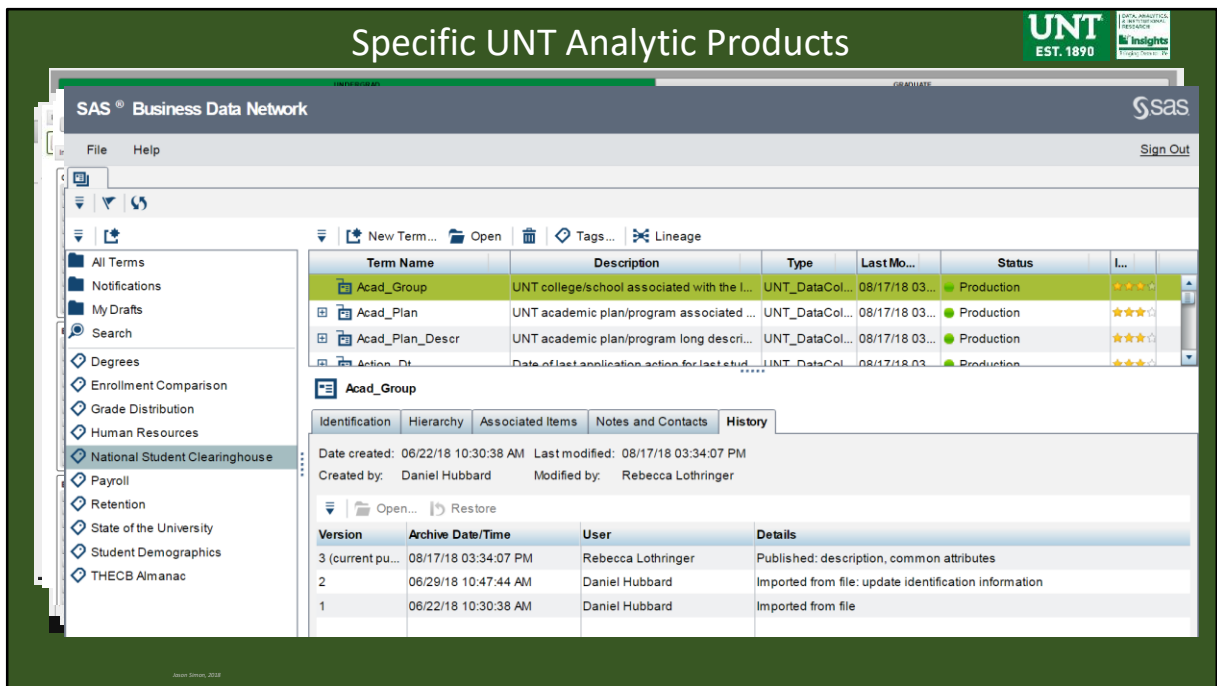
Review each screen in the stack and briefly comment on products.

10 Practical Steps an IR Leader Can Take (1)

1. Read as much as you can about differences in organizational culture between the various divisions of a higher education institution. Recognize that each division will have its own set of expectations, requirements, and needs from data and data tools.

2. Investigate if a data maturity audit has occurred or if you need to consider starting a process.

3. Review old IT project charters and whitepapers to identify possible stakeholders, data pitfalls, and prioritization challenges from the past.

4. Start with a lunch. Gather like-minded data colleagues from around campus to begin conversations around the ideal state of data on your campus. Develop some next steps to expand your circle of influencers.

5. Review executive sponsor concerns raised in press releases, internal communications, or formal requests Institutional Research, Business Intelligence Unit, or Information Technology to understand opportunities for engagement.

Read as much as you can and recognize an effective analytic culture leader is well versed not only in their aspect of higher ed but others. Recognizing that every part of the institution approaches problems differently is key.

Educause and others have tools available for you to evaluate your institution's data maturity. This is a valuable use of time and will help you identify opportunities and challenges.

By reviewing historic institutional documents from IT you will gain a wealth of information to help you buffer your new program against previous challenges. These are powerful documents that can help you avoid mistakes because they give you the gift of hindsight. You know what was planned and can see if it worked out the way the program planned. This is what lead us to recognize governance was going to be key./

A lunch is so easy. Engage in a conversion that allows you to hear concerns, identify pain points and build allies for future analytic work. It is far better to have an issue raised in a small group than standing in front of a large gathering.

Similar to the IT historic documents, look out for and read documents that leadership have put out to the community. What are their concerns, pain points, challenges related to data? Seek to understand so that you can form your executive sponsor relationship all the more easily.

10 Practical Steps an IR Leader Can Take (2)

6. Examine peer campuses – where are they in their data governance efforts? Consider site visits to learn more and see different structures in action.

7. Take a course in story-telling. Connect the seemingly disparate roles of data leader with story teller to advance your organization through data prioritization activities.

8. Conduct a review of data policies and procedures. Identify gaps and develop plans to partner with relevant campus units to address.

9. Consider stakeholder focus groups, surveys, or other feedback gathering opportunities to build your understanding of the campus data culture.

10. Hold a data summit. Provide the structure and the agenda but then listen…carefully.

We are often guilty in higher ed of what I call naval gazing or looking at our belly buttons. There is an entire universe of peer institution out there. How did they solve their challenges? What can be learned from them – physically visit and spent time- learn how to do thing and what not to do. UNT visitied three institutions in a week and every hour and dollar in expense was worth it.

Story telling is the currency of analytics. Learning how to translate our data into action is priceless. Seek out these opportunities.

Don't be afraid to expose your own weaknesses. Be brutally honest with yourself. You can't be expected to address challenges if you don't first confront them yourself.

IN alignment with this – be a researcher of data culture on your campus. Consider any of the stakeholder strategies above. Your job starting out on this path is to identify as much as you can that will help you be successful. Use these interactions also as a chance to tell the story for the need, why it matters, and what help will be required. Analytics is a team sport.

Be brave. Gather data experts from around your institution. Structure the day to focus on current strengths, weaknesses, opportunities and threats related to your data landscape and data culture. Leave with a call to action and a small team of partners who want to

make a difference.

Reflection Questions: The Take-A-Ways

- How would campus stakeholders describe the campus culture related to data?
- Where does your campus fit in terms of data maturity and practice?
- What strategies will you put in place to ensure that key constituents and stakeholders are effectively engaged in ways that are consistent with your campus culture?
- What are some strategies you would utilize to engage an executive sponsor? How have previous projects engaged these individuals? What mechanisms would you put in place to encourage and foster his/her support through this process?
- What data systems exist on your campus and where would individuals be categorized on a RACI matrix for each system?
- How might you leverage data governance practices to improve the data prioritization and data quality of your campus?

I believe you need to do some soul searching after a webinar of this type. Clearly there are no silver bullets and the way that UNT approached these challenges may not exactly fit on your campus.
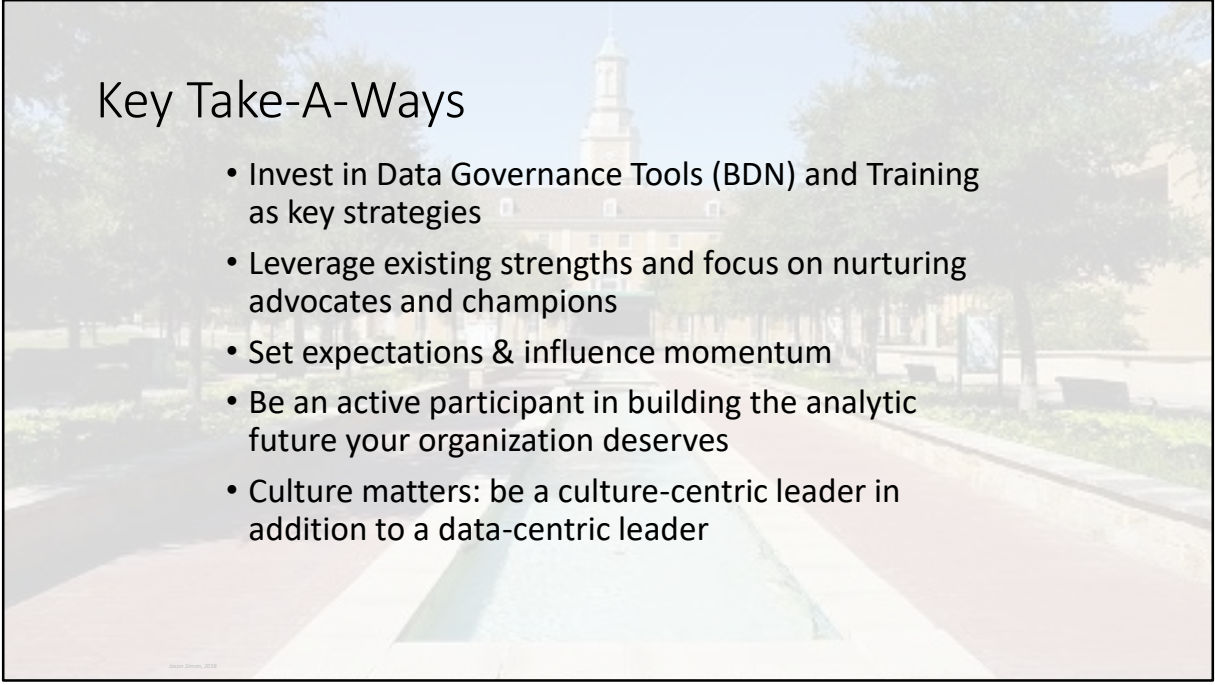
That being said, I do believe these suggestions and ideas can lay a foundation to change the way we operate with data and promote a new culture of analytics within IR.

Review some of the reflective questions above.

The Results of This Work Can Matter

- Implemented an Enterprise-Wide Data Warehouse
- Over 650 Trained and Provisioned Users
- Over 1,100 Terms Under Data Governance
- Engaged Over 30 Technical and Functional SMEs
- Rolled Out Over a Dozen Institutional Analytic Products
- Saved Campus Over $1M in the First Year
- Largest freshmen class in history, highest retention rates, dramatic climbs in 4 and 6 year graduation rates.
- Built Meaningful Relationships, Expanded Networks, Learned New Skills, and Shifted How Different Professionals Can Engage Each Other to Improve Outcomes

OK Jason you talked about ROI before. So what actually happened at UNT? Review the list above.
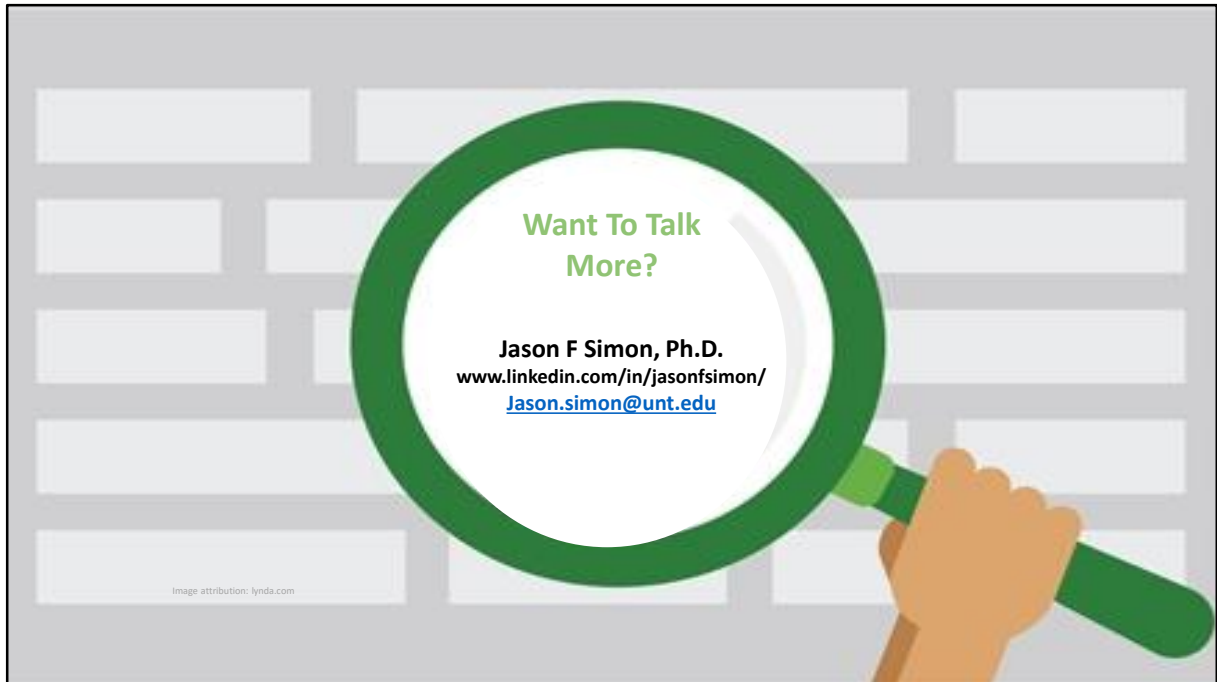
Key Take-A-Ways

- Invest in Data Governance Tools (BDN) and Training as key strategies
- Leverage existing strengths and focus on nurturing advocates and champions
- Set expectations & influence momentum
- Be an active participant in building the analytic future your organization deserves
- Culture matters: be a culture-centric leader in addition to a data-centric leader

I believe these are the five most important take-a-ways.
I also believe that you can make a difference on your campus no matter your role or level. Becoming an culture-centric analytic leader will be key and our field and our institutions need nothing less from us.

Want To Talk More?

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Q&A