BUSINESS INTELLIGENCE ADVISORY COMMITTEE

SEPTEMBER 29, 2020

PURDUE UNIVERSITY

Business Intelligence Competency Center
INFORMATION TECHNOLOGY

INTRODUCTION

ANDREA PLUCKEBAUM

PURDUE UNIVERSITY

Agenda

- **Introduction**
  Andrea Pluckebaum
- **BICC Current & Future Projects**
  Mike Budzik
- **Helping Stakeholders with their Data Blind Spots, Faculty Hiring and Departures**
  David Robledo & Sabrina Tanner
- **Reformatting of User Groups**
  Taylor Stayback
- **Attending a Virtual Conference – HEDW 2020**
  Sarah Bauer & Jennifer Littlefield
- **Cognos Portal Reorganization Project Review**
  Brian York
- **Data Community Check-in**
  All

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BICC CURRENT & FUTURE PROJECTS

MIKE BUDZIK

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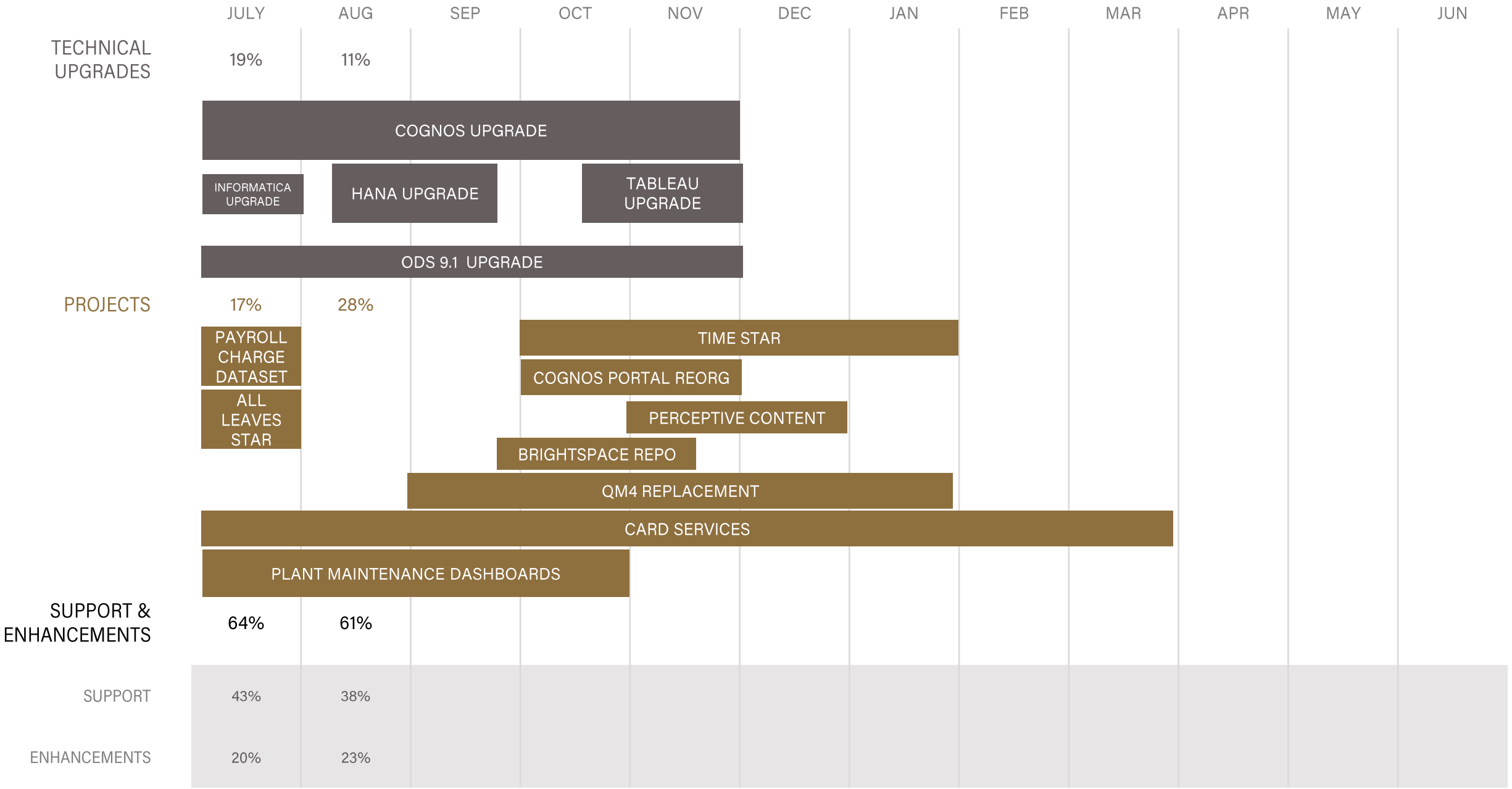
BICC ROADMAP 2020-2021

UPDATED 9-22-2020



BICC INVESTMENTS 2020-2021

UPDATED 9-22-2020

	Size (IT Hours)	% Complete	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21
Support (includes scheduled work)			592	496										
Enhancements			276	306										
Non-Project Work Total			**868**	**802**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Projects														
ODS 9.1 Upgrade	1,700	89%	145	50										
HANA Upgrade Revision 50	300	100%	49	62										
HANA Upgrade Revision 51	TBD	N/A												
Informatica Upgrade	125	100%	20											
Cognos 11.1.7 Upgrade	650	20%	39	32										
Tableau Upgrade	TBD	N/A												
Payroll Charge Dataset	120	100%	12											
All Leaves Star	400	100%	7											
Assessment of Moving Perceptive Content	TBD	N/A												
Brightspace Data Repository (DLS)	TBD	N/A												
Card Services Reporting	2,520	64%	196	276										
Cognos license rationalization	250	20%		0										
Cognos Portal Reorganization	TBD	N/A												
Data and Application landscape analysis														
HRDM Create a Time Star	TBD	N/A												
Plant Maintenance Dashboards	200	91%	20	15										
QM4 Replacement Planning	TBD	N/A												
Qualtrics Support Transition	200	15%		2										
Research SOP Tracking Tool	TBD			36										
Utility cost/consumption by building	TBD	N/A												
Other (Including Non-BI Projects)	TBD	N/A	21	34										
Total Project Hours			**509**	**507**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total Productive Hours (excludes Admin/PTO/etc.)			**1,377**	**1,309**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
"Radar" - non-approved or scoped projects														
Brightspace reporting (IDA+A)														
COVID - social distancing data integration with ODS														
Perceptive Content Reporting Implementation														
FY 21 AO Reporting Needs														
AR Assessment (FI)														
Cost Distribution Star Project (HR)														
Benefits Star or Data Mart (HR)														2021 Q3-Q4
Payroll Results (HR)														2021 Q4

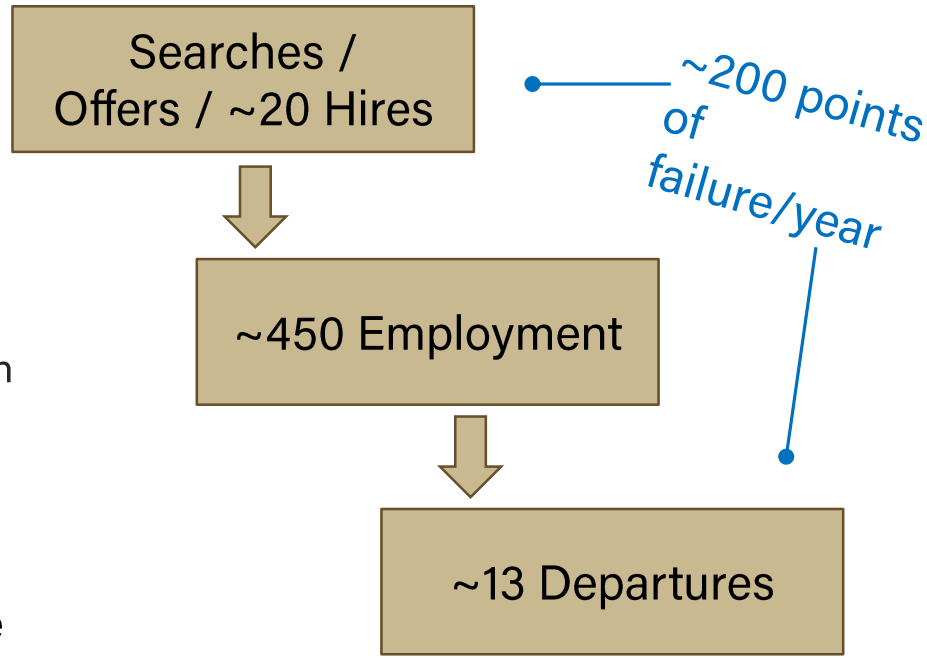
IMPROVING OUR FACULTY TRACKING PROCESS WITH INNOVATIVE REPORTING

Sabrina Tanner, David Robledo

College of Engineering

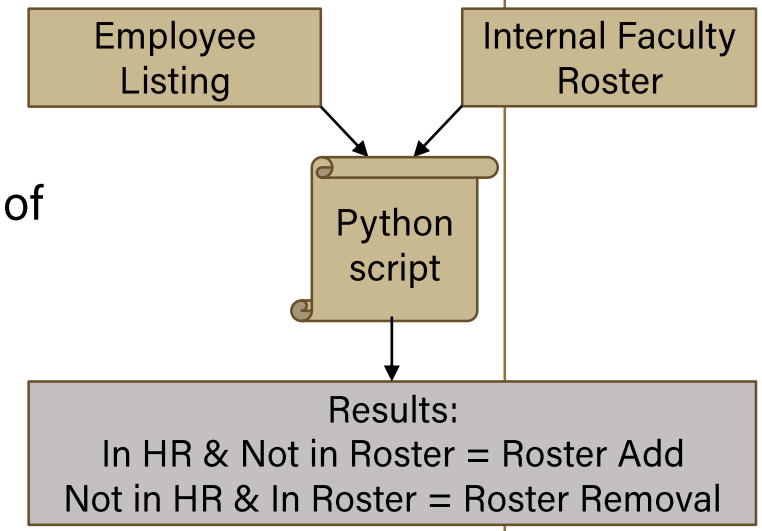
Introduction to Faculty Tracking

- College has over 450 tenured/tenure-track and clinical faculty across 13 academic units
- Academic Affairs Office (Marsha) is tasked with maintaining our **faculty roster** for usage in:
  - Internal & external reporting
  - Resourcing discussions
  - Faculty Success and Service Programs
- Faculty Pipeline
- Challenges and Blind Spots
  - Multiple moving parts & "Human Glue" → Delays in Communication
  - People change their mind, Acceptances may be delayed
  - Data accuracy woes
- Opportunity to "pave the cow path" & build HR data expertise
  - Different than standard reporting model



Sabrina's Solution

- 1x a month report, based on identifying differences between HR Employee Listing and internal faculty roster
- Allows Academic Affairs office to identify who is/is not in a faculty position for that month, accounting for unique exceptions
- Began building in July 2019, went live the following month
- Includes Tenure/Tenure Track and FEP positions (including ABE)
- Outer join operate on Person ID (process was unaffected by removal of PUID from Standard HR and Payroll report)



Enhancements

- Enhancements implemented since rollout:
  - Exception Management (i.e., ABE permanent exclusions)
  - “Employed but Not Faculty Tenure / Practice” Flag
- Future enhancements:
  - Gender & Ethnicity – values exist sporadically on existing faculty roster, expand report to include this info to fill in the gaps

Wrap Up

- Faculty tracking seems like a simple process but there are multiple touch points
- We built a monthly report to identify hires and departures that may be a surprise to the Dean's Office → **Breaks traditional model of delivering data by looking for differences in enterprise and local records.**

"I'm amazed at how insightful Sabrina's report is for us"

"It's going to make our annual audit a breeze!"

"Each time it runs we see some new departure or hire plan change that we did not know about"

"The Associate Dean and I greatly appreciate the effort and innovation that went into this report"

THANK YOU & QUESTIONS?

REFORMATTING OF USER GROUPS

TAYLOR STAYBACK

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What is changing?

- Tableau User Group and Cognos User Group will be combined
- New group will not be tool-specific
- Meetings will cover more technical topics
- New steering committee
- New name

New Steering Committee Decisions

- Name
- Vision
- Frequency of meetings
- Content of meetings
- How the meetings will be run
- Looking for a chair or co-chairs

Attending a Virtual Conference HEDW April 2020

BI-Advisory Committee Presentation

September 2020

Sarah Bauer, IDA+A

Jennifer Littlefield, Comptroller

HEDW – April 27-29, 2020

Highlights of HEDW (Higher Ed Data Warehousing) Conference

Would like discussion at end - if others have attended virtual conferences

Transition to Virtual

Conference April 27-29, transition to virtual had to occur quickly

From:

To:

<sigh>

Keynote – Motivational Speaker

IDA+A
Institutional Data Analytics + Assessment

Howie Roseman

Executive Vice President/General Manager, Philadelphia Eagles

Key Points:

- Data lets you understand your environment and make informed decisions
- Show up every day, work hard, be resilient
- When become successful, others see it as an overnight success but it's really hard work, every day
- Blend objective data with subjective info. Encourage open communication between those who are data-driven and those who rely on personal relationships or 'gut' instinct. For example, analysts and scouts in sports

In-Person v Virtual

- Didn’t have the ‘in-person’ feeling, fanfare

However:

- Could see and hear him better
- Less distractions
- People asked questions in the chat they may not have asked in person

IDA+A
Institutional Data Analytics + Assessment

Sessions

HEDW Session Tracks

- Topics v Speakers – deciding what to attend
- Little easier in the virtual world to switch rooms if the session isn't what you expected

2020 HEDW Annual Survey

- HEDW Annual Survey
  - Organization and Culture
  - Technology
  - Data Governance
  - Higher Ed Issues and Opportunities
  - People/Staffing

* May want to break out Data Science separately next year *

Take Away Findings for 2020

- Creating a data-informed culture is most pressing (Organization & Culture)
- Predictive analytics & data modeling making a push
- Data governance, including administration, data quality, and data definitions still a major need
- Student success still important

Comparison

Top 10 Comparison to Past Results

2020 Top 10	2019 Top 10
Administering Data Governance	Administering Data Governance
Data Quality ▲	Metadata & Data Definitions
Metadata & Definitions ▼	Student Success
Student Success ▼	Self-Service
Data-Informed Culture ▲	Data Quality
Self-Service ▼	Data-Informed Culture
Predictive Analytics	Predictive Analytics
Role-Based Access	Role-Based Access
Integration ★	Data Visualization
Data Visualization ▼	Standard Reports & Dashboards

- Integration has broken into the Top 10!

HEDW - Next Year Goals

- Proposals on more advanced levels
- More proposals around:
  - Organization and Culture
  - Higher Ed issues and opportunities
  - Integration
- Pursue virtual professional development opportunities throughout the year

Data Governance Highlights

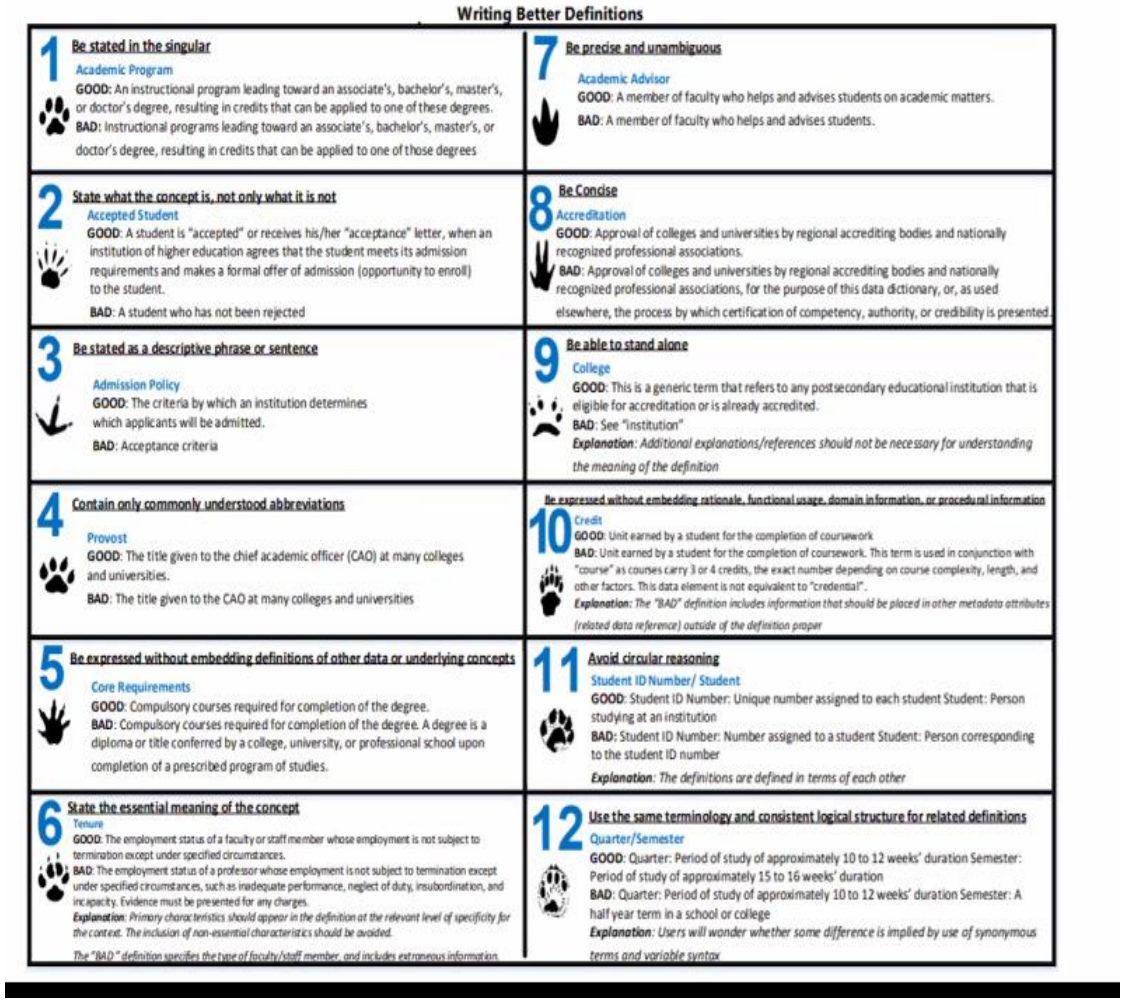
- “Culture Eats Strategy”
- Higher Ed is built around ‘tribal loyalties’
- Data governance is a program, not a project
- Often tied to large projects, like ERP implementation
- Involve information professionals: librarians, research support specialists
- Need to build common ground and document ‘Coke v soda v pop’
- Involves change. What’s in it for me v the good of the University
- Ask others ‘can you teach me?’
- Everyone is a data person
- Info catalog, not a data dictionary. Need integration to catalog, connect sources that run the University. Collaborate and extend knowledge
- Keywords are so useful. Librarians can offer guidance on keyword strategies
- Metadata – ingredients AND process.
  - Keep it simple, use best practices, produce usable definitions
- Student interns (Data Warehouse Interns)

References available:

- Chief Data Officer – University of Rochester
- Dream House that Data Governance Built - Wash U (St. Louis)
- To Know is to Learn What you Have – Boston College

Field of silos

Boston College - Infographic / Classifications



Writing Better Definitions

1 Be stated in the singular

Academic Program

GOOD: An instructional program leading toward an associate's, bachelor's, master's, or doctor's degree, resulting in credits that can be applied to one of these degrees.

BAD: Instructional programs leading toward an associate's, bachelor's, master's, or doctor's degree, resulting in credits that can be applied to one of those degrees

2 State what the concept is, not only what it is not

Accepted Student

GOOD: A student is "accepted" or receives his/her "acceptance" letter, when an institution of higher education agrees that the student meets its admission requirements and makes a formal offer of admission (opportunity to enroll) to the student.

BAD: A student who has not been rejected

3 Be stated as a descriptive phrase or sentence

Admission Policy

GOOD: The criteria by which an institution determines which applicants will be admitted.

BAD: Acceptance criteria

4 Contain only commonly understood abbreviations

Provost

GOOD: The title given to the chief academic officer (CAO) at many colleges and universities.

BAD: The title given to the CAO at many colleges and universities

5 Be expressed without embedding definitions of other data or underlying concepts

Core Requirements

GOOD: Compulsory courses required for completion of the degree.

BAD: Compulsory courses required for completion of the degree. A degree is a diploma or title conferred by a college, university, or professional school upon completion of a prescribed program of studies.

6 State the essential meaning of the concept

Tenure

GOOD: The employment status of a faculty or staff member whose employment is not subject to termination except under specified circumstances.

BAD: The employment status of a professor whose employment is not subject to termination except under specified circumstances, such as inadequate performance, neglect of duty, insubordination, and incapacity. Evidence must be presented for any charges.

Explanation: *Primary characteristics should appear in the definition at the relevant level of specificity for the context. The inclusion of non-essential characteristics should be avoided.*

The "BAD" definition specifies the type of faculty/staff member, and includes extraneous information.

7 Be precise and unambiguous

Academic Advisor

GOOD: A member of faculty who helps and advises students on academic matters.

BAD: A member of faculty who helps and advises students.

8 Be Concise

Accreditation

GOOD: Approval of colleges and universities by regional accrediting bodies and nationally recognized professional associations.

BAD: Approval of colleges and universities by regional accrediting bodies and nationally recognized professional associations, for the purpose of this data dictionary, or, as used elsewhere, the process by which certification of competency, authority, or credibility is presented.

9 Be able to stand alone

College

GOOD: This is a generic term that refers to any postsecondary educational institution that is eligible for accreditation or is already accredited.

BAD: See "institution"

Explanation: *Additional explanations/references should not be necessary for understanding the meaning of the definition*

Be expressed without embedding rationale, functional usage, domain information, or procedural information

10 Credit

GOOD: Unit earned by a student for the completion of coursework

BAD: Unit earned by a student for the completion of coursework. This term is used in conjunction with "course" as courses carry 3 or 4 credits, the exact number depending on course complexity, length, and other factors. This data element is not equivalent to "credential".

Explanation: *The "BAD" definition includes information that should be placed in other metadata attributes (related data reference) outside of the definition proper*

11 Avoid circular reasoning

Student ID Number/ Student

GOOD: Student ID Number: Unique number assigned to each student Student: Person studying at an institution

BAD: Student ID Number: Number assigned to a student Student: Person corresponding to the student ID number

Explanation: *The definitions are defined in terms of each other*

12 Use the same terminology and consistent logical structure for related definitions

Quarter/Semester

GOOD: Quarter: Period of study of approximately 10 to 12 weeks' duration Semester: Period of study of approximately 15 to 16 weeks' duration

BAD: Quarter: Period of study of approximately 10 to 12 weeks' duration Semester: A half year term in a school or college

Explanation: *Users will wonder whether some difference is implied by use of synonymous terms and variable syntax*

Infographic – Writing Better Definitions

Classifications

Added a fourth several years ago

1. Public
2. Confidential
3. Internal Use Only
4. Strictly Confidential

   SSN, Credit Card #s

Analytics

From Statistical Significance to Practical Application: Communicating Predictive Results between Analysts and Stakeholders (Heather Chapman, Weber State University)

- Role of Analyst is a guide, interpreter, and translator
- Learn to be “bilingual”
- Speaking the language of statistics is not enough, you must speak the stakeholder language to be truly valuable, become a data informed citizen, and encourage that growth in others

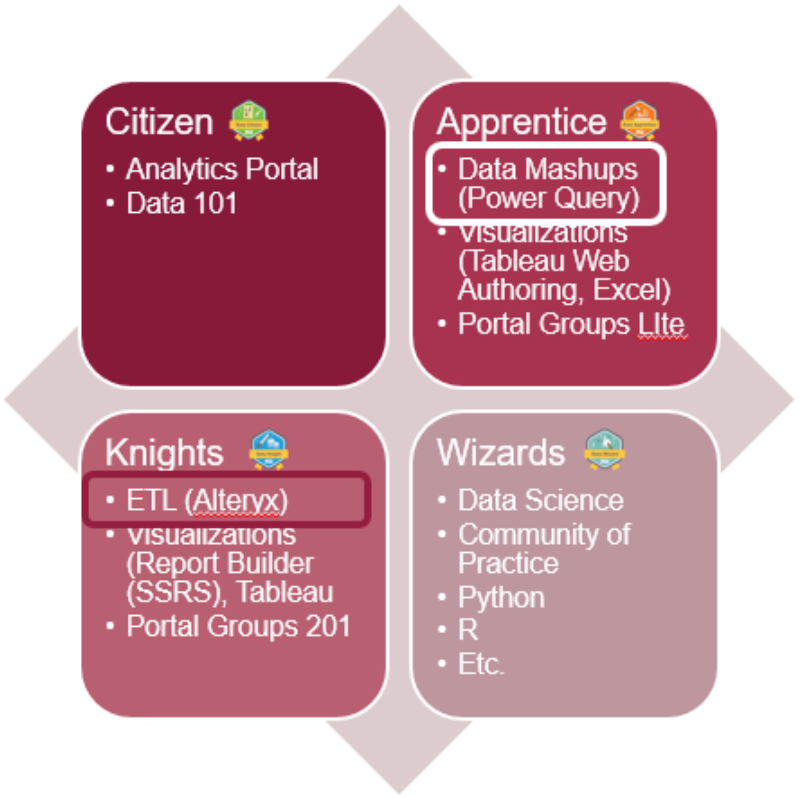
- To be a data informed citizen:
  - Be curious -- Look for opportunities to learn, regardless of content
  - Be engaged -- Actively read, watch, or talk to those around you, regardless of their opinion; read beyond the headlines
  - Be perceptive -- Is this source reliable? Who wrote it? Who sponsored it? Why was it written? Is it verifiable? Is it transparent?
  - Be critical (of your own views as well as others) -- Actively engage in discussion that is different from your own belief system or what you “know” to be true
  - Do not believe a single source of truth
- Interpreting data is not easy!

Analytics (continued)

- What do you mean by that? (Cynthia Carlton, University of Rochester)
  - Transparency → Understanding → Trust → Engagement
  - Build a common language that is understandable to anyone
  - Functional Definitions = Business Glossary vs Technical Definitions = Data Dictionary
  - Applying What Do You Mean? (WDYM) logic to Report Information, Data Sources, Calculations, Presented Information, and People creates real insight
- Accelerating Analytics Across the Enterprise (Pramod Kunju, University of California – Irvine)
  - Problem: Business agility, Disparate data sources, Expensive ETL, and Constant changes during development
  - Answer: Data virtualization (DV)
  - By 2020 Organizations Utilizing Data Virtualization Will Spend 45% Budget, Less Than Those Who Do Not, on Building and Managing Data Integration Processes for Connecting Data Assets. (Gartner)

ETL

- **ETL for Power Users? Yes, and we will show you how (Kristin Kennedy, Arizona State University)**



alteryx | The Thrill of Solving

NEED FOR FASTER INSIGHT DRIVES SELF-SERVICE DATA PREP

FOR THE OVERWHELMING MAJORITY, REDUCING TIME TO BUSINESS INSIGHT IS THE MOST IMPORTANT BENEFIT OF INCREASING SELF-SERVICE DATA PREP.

81%	Shorten time to business insight
76%	Increase data-driven decision making
53%	Improve reaction time to business conditions
49%	Operational efficiency for frontline workers
43%	Gain a single, complete view of relevant data

Source: Last paragraph, page 26

Access, Master Data, & Data Quality

- Creating Better User Groups with ACM and Grouper (Julie Parmenter, Indiana University)
  - Problem: Effectively managing 1000s of groups in the BI space
  - Answer: New IU Developed software that will create and manage groups, which can be used for a variety of purposes, can be applied to Tableau Server, can be used as Active Directory groups, can be used in other integrations, and is the User Interface to Grouper
  - Results: Improves group security via ACM and ease of use for personnel responsible for system access

- We Don't Have Suites: tackling master data in an institution of competing business priorities (Cynthia Carlton, University of Rochester)
  - Problem Statement: designate a system(s) of record and system(s) owner for owned and lease buildings, including meta data such as mail to address, building numbers, room usage, etc. and data must be consistently maintained
  - Lessons Learned

- Data Cleansing using the Google Places API (Charles Rosenberg, PhD, University of Rochester)
  - Worked with datasets to match secondary and post-secondary schools from across the world with spelling inconsistencies that are entered by students and those schools from the college board list which isn't 100% complete
  - Used Google Place API to update data entered by students and attempt to match it with college board list
  - Uses a free tool that is easy to access to avoid extensive manual work to look up, match, and validate noisy data

Technology, Tools

- SAS,R, Python, Power BI
- Regression, Analytics, AI
- Modularizing with dbt
- API Directory Adoption
- ETL for Power Users
- Creating Better User Groups with ACM and Grouper
- Data virtualization
- Data Cleansing
- Master Data
- Data Management
- Agile development
- Building a data warehouse for Workday Student

Overall Reaction to a Virtual Conference

Conference was end of April so early in the pandemic

In-Person v Virtual - Overall

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Missed:

- Seeing colleagues and presentations in person
- * Networking and informal conversations*
- Experiencing a different campus, different part of the country
- Interaction at the vendor booths with others who use the software
- Flow of asking questions. Questions were held til the end, Chat box for technical issues

However:

- Had Zoom rooms for the vendors and could reserve a time
- If had more planning time, could have had better BOF (birds of a feather) rooms and some informal rooms
- No technology issues
- No travel issues
- ½ days allowed to time to do other work, reduced registration fee
- Committee very open to suggestions for upcoming year

Group Discussion

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Others' virtual conference experiences?

- Impressions
- Plan to attend a virtual conference?
- Plan to attend a shorter virtual event?
- Professional development?

Going Forward

- Staying current with skills/ trends
- Building relationships

Thank you, let's stay in touch re: professional development.

COGNOS PORTAL REORGANIZATION

BRIAN YORK

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Cognos Portal Reorganization Project

Goal

This project will assess the current Cognos report structure and identify opportunities for better organization, re-naming, cleanup and consolidation, resulting in a smaller set of reports that are easier to navigate and maintain.

Objectives

- Assess the inventory of existing reports
- Engage with report consumers and other stakeholders to understand their needs related to reports' organization
- Identification and adoption of standard reporting structure
- Cleanup the existing environment i.e. execute the recommended changes
- Determine a sustainable process for managing the reports going forward (report curation)
- Establish reporting governance structure

Cognos Portal Reorganization Project

Key Requirements

- A Cognos content structure that
  - is optimized for consumers
  - consistent
  - repeatable for onboarding new areas of the university
  - tolerates department name changes and org structure changes
- Merged security framework

Next Steps

- Complete Project Charter
- Establish agreed upon schedule and communication plan

DATA COMMUNITY CHECK-IN

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First, introduce yourself and then discuss…

Professional Development Reflection	Networking Discussion
• What was one professional highlight this month/quarter? • What did you do this month/quarter to step out of your comfort zone? • What are you really good at and/or what bores you? • What are three things you are grateful for at work? • What is one thing you are looking forward to this semester/quarter?	• Is cereal soup? Why or why not? • Do you show or hide paragraph marks and hidden symbols in word? • What's really popular now that will be passé in 5+ years? • What's a fun way to answer an everyday question (e.g. How's it going, what do you do)? • What would be the coolest animal to scale down to the size of a squirrel?

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THANK YOU

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