Collaborative Knowledge Network Report and Implementation Planning

Institutional Research System-wide Council

September 8, 2017

Introduction

The Institutional Research Council formed in 2004 and since inception has served as a primary conduit for communication, collaboration and decision-making by IR leaders and staff. Collaboration has been a core value of the IR function for nearly two decades. Many of the "low hanging" fruit relative to improving operations have already been picked, so to speak, leaving only the more challenging and/or complicated strategies going forward. Institutional research professionals within the UA system understand the priorities set by the BOR, President, and university leadership, and are as responsive as possible to those needs under the current operating conditions.

In late June 2017 IR council membership was formally expanded via a global update to the organization and roles of all UA system-wide councils. The newly formalized Institutional Research System-wide Council membership includes:

UAA	UAF	UAS	UA/SW
Erin Holmes	Ian Olson	Brad Ewing	Gwendolyn Gruenig
Bruce Shultz		Karen Carey	Karl Kowalski
John Stalvey		*Dean, CoE (tbd)*	

The new IR Council was directed as follows:

> 1. Creation of a Collaborative Knowledge Network will be pursued without delay. It will be led by a newly formalized IR Council with members from Statewide and each university. Priority should be on process improvement, standardization, and automation.

> 2. The IR Council will present its initial report and implementation plan to the President September 1[1].

To address this charge, the Council adopted an aggressive schedule of weekly meetings between July 17 and August 29, 2017, developing the Collaborative Knowledge Network report and implementation planning information presented herein.

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[1] Due date updated to September 8, 2017.

Findings

This document outlines CKN items the IR System-wide council identified as reasonable for immediate pursuit, as well as giving a comprehensive look at the viability of each CKN component, and feedback on areas identified for further analysis.

The Collaborative Knowledge Network (CKN) concept was identified by the Strategic Pathways IR Council Options team as the "optimal mix of decentralization and consolidation that will support improvements in service and cost effectiveness through the division of labor, and the systematic use of automation, data and process standardization, and intercampus collaboration." The team noted that while the CKN was the most promising option relative to the charge, it was also the most difficult option to successfully implement, relative to the current state of the university system. A number of the best practices identified in the CKN have been attempted in the past with varying outcomes and long-term sustainability, and/or are already occurring to some degree now. This report focuses on clearing a path to success for implementation of many, if not all, of the CKN elements, over time. Appendix A, starting on page 7, describes the CKN option proposal in detail.

The following is a summary of next steps for implementation planning:

Level 1 – Data Architecture, Governance, and Administration/Warehousing

- Significant improvements in documentation related to IR-produced data products
    - Adopted process[2] for developing/updating and documenting data and data definitions in a systematic, collaborative manner will be refined and updated based on experiences and needs of individuals who used the process, as well as those identified in the RACI matrix who did not participate in the process over the last year.
    - For significant improvement, leadership will need to consistently require use of such a process. This may necessitate more planning time and cross-functional, cross-university/SW work by leaders and staff on the front end of data-related projects and proposals, resulting over time in delivery of better information and avoidance of costly re-work to fix issues identified post-implementation.

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[2] http://alaska.edu/swbir/ir/data-architecture/data-definitions/UA_Process_Data_and_Definitions.pdf

- IR work will utilize the same applications, server, and database
  - This item looks to improve efficiency and effectiveness of resource use in support of the Level 1 function. First step is to assess the technical impacts and resource requirements of transitioning away from the partially duplicative maintenance of major database/data warehouse instances at UA/SW and UAA, each utilizing different database types (Oracle and MS SQL server). There may be significant near-term resource and time costs to both UA/SW IR and IT, and UAA IR to effect the transition.
  - Second step is to set deliverables and timeline to transition to a common set of data administration and warehousing tools and one data warehouse instance, including identification of accountable and responsible entities.
- Other items, such as the addition of Level 1 staff FTE, may be more difficult to implement now. Full details are available in the matrix provided in Appendix B, starting on page 12 of this report.

Level 2 – Reporting

- The first step toward adopting all Level 2 items is for the IR Council and each university/SW community to reach a mutual understanding and agreement of what is appropriate to share.
- Second step is to establish and populate a centrally available, queriable repository for work products in this category. Several viable options for such a repository are in use at UA now.
- Utilize a common set of tools for Level 2 work
  - Council supports leveraging and scaling up a set of core, automated SharePoint reports based on the suite of work products collaboratively developed and in use by UAA and UAS. Support resources for this effort are intended to become available through reduction of database/data warehouse redundancy described in Level 1.

Level 3 - Analytics

- Identify examples of past advanced analytics projects conducted in IR offices.
  - This can begin immediately.
  - A venue for regular sharing should be identified.
- Share the models, methodologies, final reports, etc. with the other IR offices so that each office can focus on improving the quality of reporting for their institution instead of completing from scratch a model, methodology, final report, etc. that already exists elsewhere in the system.

- o First step toward implementing this item is for the IR Council and the university community to reach a mutual understanding and agreement of what is appropriate to share.
  - o Next step is to establish and populate a centrally available, queriable repository for work products in this category.
- The remaining Level 3 item, identification of a common set of tools for advanced analytics, may be more difficult to implement now. Full details are available in the matrix provided in Appendix B for Level 3 on page 13.

Areas for Further Analysis

Five broad topics were identified along with the CKN concept as requiring further analysis for implementation planning. Each topic and a summary of observations follow.

A. Executive Commitment: genuine, broad, and sustained over multiple years

This item refers to a willingness and commitment of leaders throughout the university community to consistently support best practice strategies and principals for the IR function. Operational and strategic choices sometimes appear to be made based on what will create the least disruption or controversy, although the more challenging or complicated choice was identified as optimal to move the IR function forward.

B. Change Management

This item refers to the need for continuous quality assessment and quality control principals to be actively applied to the CKN as it is developed and maintained. Such principals should be purposefully and systematically applied to business practices within IR, as well as in other key functions having significant impact on IR's ability to be effective. For example, the IR council identified and several suggestions for the IT Council's consideration that would significantly improve the IR function's ability to meet its charge. See Appendix C, starting on page 14.

C. Governance Structure

On a day-to-day basis, this is a key consideration for successful CKN implementation and maintenance. The Institutional Research System-wide council needs to develop and implement an appropriate structure. Several governance models are commonly identified at the national level for the contemporary IR function[4] that may serve as a starting point for consideration.

D. Resource Analysis

The council discussed the need for each IR office to provide some basic information as a starting point for resource analysis and identification of areas where further optimization may be possible. Examples of key information includes, but is not limited to: mission responsibilities, which are unique among the four offices; a catalog of services and routine reporting; areas of relative strength and weakness; available resources (staff, space, software licensing, etc. A formal resource analysis of the IR function was last conducted in 2004 for the Administrative Operating Effectiveness and Cost Savings Review[3], and may provide some structure for cataloging and analyzing this area today.

E. Equitable Allocation of Resources

A reasonable allocation of resources under the new CKN paradigm is yet to be defined. Over the last several years, staffing levels at some IR offices have grown while reductions occurred at other offices. The is assumed to simply be the observed result of different administrative approaches and priorities in meeting annual "MAU" level budget shortfalls over the last few years, as well as differences in the magnitude of annual cuts needing to be absorbed at each "MAU". The way in which IR resources could be equalized under a new operational model should be carefully considered.

Other Considerations

The challenges faced by UA's IR function are not unique. Key observations made in the recent publication *A New Vision for Institutional Research* (Swing and Ross, 2016) [4] are directly relevant to the topics covered in this report and may help identify how IR should plan to adapt for maximum effectiveness over time.

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[3] Available online at:
https://drive.google.com/a/alaska.edu/file/d/0B8087puEXVA8NTRibHFLclBaNEFCN2xaLXpzcS1GMUhpcnl3/view?usp=sharing
[4] Available online at: https://www.airweb.org/Resources/ImprovingAndTransformingPostsecondaryEducation/Documents/A-New-Vision-for-Institutional-Research.pdf. Statement of Aspirational Practice for Institutional Research is given on pages 11 – 13.

What is the Collaborative Knowledge Network?

The "Collaborative Knowledge Network" was one of four options identified by the IR Strategic Pathways Phase 2 Options Team. A summary of the CKN option 4 follows.

Charge to the IR Strategic Pathways Phase 2, Options Team: Develop and review options for organizational restructuring of functions that support improvements in service and cost effectiveness.

Scope: All of Institutional Research across the UA system.

Goals: Reduce operating costs. Align with UA priorities.

Team Members
- Ellis Ott
- John Stalvey
- Karen Schmitt
- Austin Tagaban
- Diane Wagner
- Doug Johnson, PGS Facilitator
- Brad Ewing
- Faye Gallant
- Mary Gower
- Gwen Gruenig
- Coy Gullett
- Orion Lawlor
- Ian Olson

Key Stakeholders
- Legislators
- Employers
- Public Agencies
- Parents
- Alumni
- Executive Leadership
- Board of Regents
- Faculty
- Staff
- Students
- Community

Institutional Research Staff FTE Distribution: Transformation via the Collaborative Knowledge Network
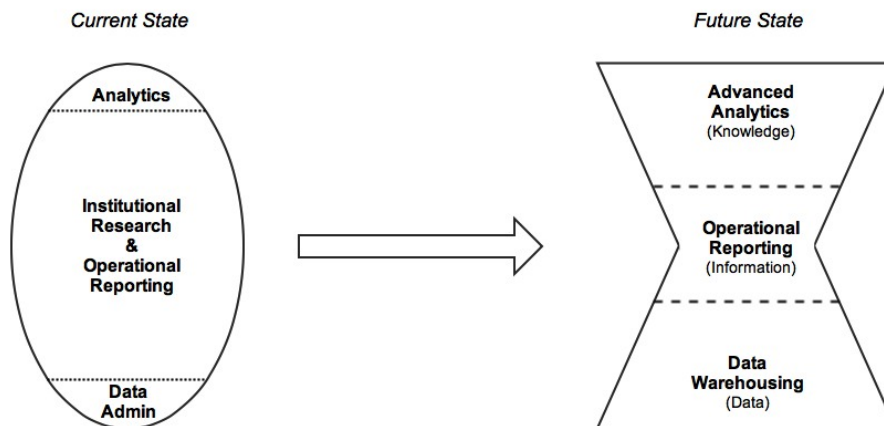
## Option 4 – Collaborative Knowledge Network

Narrative Description

The Collaborative Knowledge Network option was developed by the IR Strategic Pathways team to identify the optimal mix of decentralization and consolidation that will support improvements in service and cost effectiveness through the division of labor, and the systematic use of automation, data and process standardization, and intercampus collaboration. This option recognizes the importance of streamlining processes and technologies across the four IR offices while also maintaining IR expertise and leadership at each institution. Broad changes have been proposed for the implementation team's consideration that will (1) significantly increase IR's contributions to standardized data warehousing and automated reporting, (2) decrease IR's efforts focused on manually developing static reports, and (3) increase IR's capabilities focused on advanced analytics and complex research projects. These changes are expected to result in reduced institutional operating costs over time and increased access to accurate, current, and consistently collected information that is meaningful, insightful, and action-oriented.

Implementing the Collaborative Knowledge Network option would naturally lead to a few challenges related to streamlining processes and technologies. Additionally, this option would be the most complex to implement due to the highly collaborative nature of this model. Broad leadership buy-in and a sustained multi-year commitment from the executive level would be central to the successful implementation of this option.

Diagram Overview

The IR Strategic Pathways team has developed a diagram to clarify the broad changes that have been proposed as part of the Collaborative Knowledge Network option. The vertical axis has been disaggregated by three of the main functions that the four IR offices provide to their institutions: (1) data warehousing, (2) operational reporting, and (3) advanced analytics. Current workloads at each IR office result in most of the FTE focused on level 2. However, the IR Strategic Pathways team sees value in increasing the FTE focused on level 1, reducing FTE focused on level 2, and increasing the FTE focused on level 3-resulting in a shift from a fishbowl-shaped organizational structure to an hour-glass shaped organizational structure.
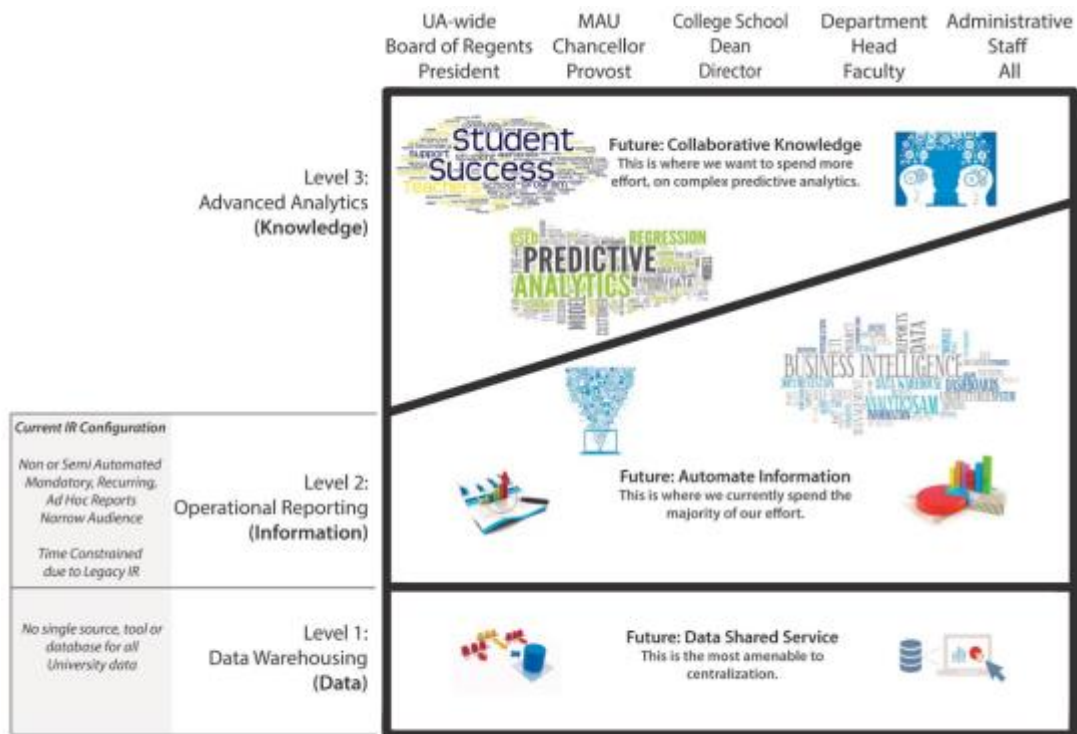
- ▶ **Level 1**: Streamline queries and applications for database extraction, business intelligence reporting, and advanced analytics. Centralize most database queries and views in a new database schema that links directly with automated reports. A new operational database analyst--complementing the existing DSDMGR database analyst--manages this schema and co-develops queries, views, and tables with each IR office to ensure that they are accurate and meaningful. All IR offices will work from the same applications, server, and database. Significant improvements in documentation related to IR-produced tables, queries, functions, procedures, etc.

- ▶ **Level 2**: Identify a core set of reports developed by each IR office. Share report designs, benchmarks, best practices, etc. so that each IR office can focus on improving the quality of reporting for their institution instead of completing from scratch a report that already exists elsewhere in the system. Well-designed database-linked automated reports can--over time-- replace some of the efforts that currently consume a significant amount of time for daily reporting and open/close freeze reporting. This will allow IR offices to develop new and higher quality reports, increase data literacy at each institution, and focus on complex research projects and advanced analytics.

- ▶ **Level 3**: Determine the appropriate applications that should be used at each IR office to conduct advanced analytics. Identify examples of past advanced analytics projects conducted in IR offices. Share the models, methodologies, final reports, etc. with the other IR offices so that each office can focus on improving the quality of reporting for their institution instead of completing from scratch a model, methodology, final report, etc. that already exists elsewhere in the system.

Key Change Elements

▶ **Offering Changes**: Increased capacity for managing the data warehouse will increase the time available to develop well-designed reports that follow best practices and conduct deeper research and advanced analytics that follow best practices. Potential to provide higher level of service. Promotes a more open sharing environment for database queries and report designs. Day-to-day IR tasks would be more efficient. Increased capacity to answer 'big questions'.

▶ **Staffing Changes**

Staffing Changes	Status Quo	Option 4a	Option 4b
Level 1: Data Warehousing	1 FTE	3 FTE	4 FTE
Level 2: Operational Reporting	16 FTE	10 FTE	10 FTE
Level 3: Advanced Analytics	2 FTE	6 FTE	7 FTE
Total	19 FTE	19 FTE	21 FTE

4a = Current FTE levels applied to Collaborative Knowledge Network option
4b = Added investment in IR applied to Collaborative Knowledge Network option
Note: This table provides approximations for illustrative purposes and ultimately may vary depending on the decisions by the implementation team and executive leadership

▶ **Use of Facilities/Technology**: Similar to current levels. Small increase in license fees for advanced analytics software. Automation would not require much investment if the UA System follows the process currently used by UAA IR and UAS IE (e.g. SSMS, Reporting Services, SharePoint, Excel). However, if a different application is purchased (e.g. EAB APS, Tableau, Domo, etc.) this could require significant upfront investment and recurring costs.

▶ **Access for Students and Other Clients**: Access should increase significantly due to increased collaboration across the four IR offices, improved data warehousing, automated reports (data portals and dashboards).

▶ **Administration**: Current services to the universities and system offices would be maintained.

▶ **Front-End Investment**: Dependent on details from implementation team. Any new costs are seen by the group as investments with real potential to improve efficiencies and increase revenue throughout the system.

▶ **Community (External) Engagement**: Public-facing self-service data interface would increase access to accurate, current, and consistently collected data.

▶ **Product Quality**: Increased availability of accurate, current, and consistently collected data that can be linked with automated reports. Automated reports and advanced analytics projects would be developed and designed by each IR office for executives, staff, faculty, students, etc. at their institution. Increased quality of the design of reports and the increased use of national standard benchmarks and best practices.

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Pros and Cons

Pros	Cons
▶ This is a transformative option, that if executed well, will make IR a more strategic asset	▶ Most complex to implement because of the highly collaborative nature of this model; requires willingness to compromise
▶ Provides actionable knowledge	▶ Additional resources needed to accelerate results
▶ Supports increasing revenue	▶ No new investment risks the success of the option
▶ Achieves automation and customization	▶ Time to implement and sustain
▶ Favors shared services where appropriate	▶ Negotiating through the redistribution of resources
▶ Gains efficiency through division of labor and focus on specialization	▶ This option could be more difficult to communicate due to the complexity which could impact political perception
▶ Promotes skill pathway, flattens the learning curve, reduces turnover costs	
▶ Codifies and increases collaboration	
▶ Promotes a collaborative culture and diversity of thought	
▶ Supports knowledge transfer	
▶ Supports wider access to information	
▶ Most responsive to a variety of customers across Alaska	
▶ Helps answer the really big questions and supports strategic thinking	
▶ Prevents need for shadow IR	
▶ Supports higher product quality	
▶ Most sustainable	
▶ Best opportunity to shift to a more data-driven decision making culture	
▶ Creates the structure to promote knowledge generation	
▶ Creates an environment where various skill sets can thrive	
▶ This model promotes a more proactive leadership role for IR	
▶ Creates framework for building an effective governance structure	
▶ Faster response times	
▶ More easily adaptable to change	

Level 1: Best Suited to Centralization

	Streamline queries and applications for database extraction, business intelligence reporting, and advanced analytics.	Centralize most database queries and views in a new database schema that links directly with automated reports. A new operational database analyst--complementing the existing DSDMGR database analyst--manages this schema and co-develops queries, views, and tables with each IR office to ensure that they are accurate and meaningful.	All IR offices will work from the same applications, server, and database.	Significant improvements in documentation related to IR-produced tables, queries, functions, procedures, etc.
Ready for Implementation?	Yes, following successful identification and adoption of prioritization criteria, common method for documenting and sharing.	Yes, conditional on base funding for an IS Professional position being made available through reallocation or new source.	Yes, pending assessment and understanding of impacts and resource requirements.	Yes, dependent on clear, sustained executive commitment, resource dedication, and necessary process improvements are required to implement.
Committee Comments	Need a consistent method/language for sharing. Criteria for identifying the most impactful, priority items that should be focused on for this work are not mutually agreed to and should be established before this work begins.	UAA and UAS indicate this investment is important but not a prerequisite to successful implementation of the CKN components over a longer period of time; UAF and UA/SW indicate it would not be possible to implement the CKN without the additional staffing for level 1 functions. Regardless of whether an expansion occurs to add operational data warehouse support, all agree the current level 1 function is understaffed and may represent a single point of failure. There is 1 FTE at UA/SW staffing all of Level 1 now, with a backlog of work, and the only backup staff for this position is the Associate VP.	Eventually, reduction or elimination of duplication of effort occurring now at UA and UAA will free up staff capacity for other activities. It may also help address some performance issues occurring now with required daily transfers of large amounts of raw data between the two systems, by performing data transformation and load processes on the same server.	Gaps in documentation for data definitions are more apparent and easier to identify when data are actually used. UAS and UAA expressed concern that identifying this as a prerequisite element will hinder progress on CKN implementation, while UA/SW and UAF identify this as a critical step towards advancing a more coherent and accessible data service to the broader university community. Documentation of this kind of information will aide in new IR employee onboarding. Much of this information exists today in an undocumented manner, a kind of institutional memory that is lost when IR professionals retire or otherwise move on. This step is perceived to be best accomplished over time in an iterative, incremental way, i.e., documentation is constantly improved as new knowledge is obtained and old systems/methods fade.
Current State	Several industry-standard tools are available and being explored at UA/SW and other units.	There is no central operational database analyst support function now. A few operational data projects are supported by UA/SW, i.e. the Early Semester report reporting data used by all universities,	Partially duplicative in function, two major database/data warehouse instances are maintained by UA/SW and UAA, utilizing different database types (Oracle and MS SQL server) - there may be others at campuses or units not identified. A variety of tools are used, including SAS, PL SQL, MS SQL, TOAD and likely others that have not been identified.	IR council developed and adopted a process, with specific RACI assignments, to respond to Statewide Transformation Team recommendations. However, the process is not widely utilized outside UA/SW and required OMB performance reporting. Its recognized that this task is a separate responsibility of the IR council that will need to progress regardless of CKN adoption. This element alone most effects the IR function's capacity to efficiently and effectively provide data warehousing services to UA. A resulting example of the status quo are the comprehensive race and ethnicity data collection and reporting update for all UA data systems that were developed and approved for implementation by each university's leadership and the Summit Team in spring 2017, independent of the adopted, systematic review process. Use of the process would have proactively addressed and resolved areas where the recommendations do not comply with federal requirements. A greater amount of work/re-work to address these issues post-hoc are now required, along with taking longer than desired to implement the changes.
Need to Address & Next Steps	A business process for systematic use of these could be developed and implemented, assuming clear agreement and mutual buy-in/commitment from IR offices about sharing.	Functional areas, such as student services, finance, etc. may be in a good position to define operational data needs directly, in addition to IR offices. Success of this item will depend, in large part, on completion of other Level 1 strategies.	Pending information needed for a complete technical assessment, there may be significant resource and time opportunity costs to both UA/SW IR and IT and UAA IR (and IT?) to make the transition. Ready to set deliverables and timeline to transition to a common set of data administration and warehousing tools and one data warehouse instance, including identification of accountable and responsible entities.	Added executive commitment is a prerequisite for success in this area, to ensure proper data definition development vetting is consistently conducted even when timelines are tight and pressure is high to get something done. Although this has been a stated leadership priority for many years, it is unclear that disclosing and documenting reporting methodology is a relative priority compared to other leadership foci. Resource availability and commitment within the IR function and in functional areas, i.e. student, financial aid, finance, human resources, research and sponsored programs, etc. at all levels and locations is required to achieve valid, transparent and replicable data and data definitions documented according to approved processes and guidelines. Recommend prioritizing areas for this work as a way to move forward on this without eating the whole elephant all at once.

Level 2. Systematically move from semi-automated/manual work toward fully automated work products in this area, freeing up staff capacity for Level 1 and Level 3 work.

	Identify a core set of reports developed by each IR office.	Share report designs, benchmarks, best practices, etc. so that each IR office can focus on improving the quality of reporting for their institution instead of completing from scratch a report that already exists elsewhere in the system.	Well-designed database-linked automated reports can--over time-- replace some of the efforts that currently consume a significant amount of time for daily reporting and open/close freeze reporting. This will allow IR offices to develop new and higher quality reports, increase data literacy at each institution, and focus on complex research projects and advanced analytics.
Ready for Implementation?	Pending mutual understanding and agreement on what is appropriate to share.	Pending mutual understanding and agreement on what is appropriate to share.	Results from implementation of previous Level 1 and Level 2 elements.
Committee Comments	This step seems to be the inventory work that is frequently identified as a need.	A queriable repository needs to be used for these kinds of outputs. Work products may not always be adopted without modification, however having direct access to the library of work completed by others would be helpful in seeing "how they did it". Such sharing sometimes occurs easily now for reports and data products in cases when one office is aware a report exists and/or the authoring office is willing and able to share. On the flip side, there are situations where sharing does not occur for unknown reasons, or when the product may be considered proprietary (recruitment plans, proposal applications, etc.), sensitive or potentially damaging to the university now or in the future.	Data literacy will flow if Level 1 data services are well constructed. Believe an expectation of the President is that under the CKN the direction the BOR sets for UA will be a priority and focus of most analysis efforts at every IR office, along with university-specific needs.
Current State	Entire universe of UA/SW data, code, work products and projects are available to each university IR office via Redbear shared server and data warehouse. These are mined and utilized by IR staff now, however a comprehensive system for indexing would make use much easier. University to UA/SW and University to University work product availability is not well understood at this time	UA/SW - see above comment about need for better organization for use by universities.	n/a
Need to Address & Next Steps	Recommend sharing information about all reports to allow for identification of the core reports.	UA/SW - Recommend sharing all work, with a limited number of clearly articulated, justifiable exceptions spelled out in advance. A common, queriable repository should be identified and adopted.	Results from implementation of previous Level 1 and Level 2 elements.

Level 3. High institutional ROI for IR capacity applied in this area, utilizing complex analysis and predictive analytics, machine learning, and data visualization.

	Determine the appropriate applications that should be used at each IR office to conduct advanced analytics.	Identify examples of past advanced analytics projects conducted in IR offices.	Share the models, methodologies, final reports, etc. with the other IR offices so that each office can focus on improving the quality of reporting for their institution instead of completing from scratch a model, methodology, final report, etc. that already exists elsewhere in the system.
Ready for Implementation?		Yes	Pending mutual understanding and agreement on what is appropriate to share.
Committee Comments	There were a spectrum of reactions to this item, summarized here. Supporting: Having a standard set of technology for this purpose makes development of training easier, lowers cost of software and infrastructure, ensures portability of technical pieces like code, and promotes collaboration. Neutral: This could be implemented later after earlier steps are established. Not in support: To dictate what software should be used is not appropriate. IR offices should take advantage of the different skills of IR employees, not lock people into learning something new just for the sake of standardization of software; the skills set of IR type people in Alaska are narrow.	The university perspective was that research questions are often unique to each institution, and research conducted at one university is not appropriate for another university. UA/SW's perspective was that some research is applicable across campuses or universities if of interest to the BOR or legislature or if considering student populations that attend more than one campus or university. There is support to have a forum to share information, for example the "PAIR Share" one-hour sessions -- it's helpful to explain to colleagues what we do and how we do it. Knowledge in this way expands and collaboration strengthens.	A queriable repository needs to be used for these kinds of outputs. Work products may not always be adopted without modification, however having direct access to the library of work completed by others would be helpful in seeing "how they did it". Such sharing sometimes occurs easily now for reports and data products in cases when one office is aware a report exists and/or the authoring office is willing and able to share. On the flip side, there are situations where sharing does not occur for unknown reasons, or when the product may be considered proprietary (recruitment plans, proposal applications, etc.), sensitive or potentially damaging to the university now or in the future.
Current State	Variety of applications in use, including SAS, R, SPSS, STATA, Excel and a number of others. Currently, the tool is selected based on the task and the analyst's personal comfort with a given tool.	Historically, the old IR council was a venue for regular presentation of university analytics projects.	UA/SW's staff capacity to regularly perform complex analytics work has been almost eliminated as a result of staff reductions since FY15, however all reports and underlying work products are available via Redbear shared server and data warehouse. A comprehensive system for indexing materials would make use much easier. University to UA/SW and University to University work product availability is not well understood at this time.
Need to Address & Next Steps	Recommend implementing this item after progress is made on fundamental Level 1 and 2 tasks.	This activity will need to be made a priority relative to existing backlog of work.	Recommend sharing all work, with a limited number of clearly articulated, justifiable exceptions spelled out in advance. A common, queriable repository should be identified and adopted.

Response to: What are the top 5 IT "pain points", roadblocks or opportunities for improvement, from the perspective of your area?

1) Meet the first charge of the Information Technology Council: "Establish IT policy and administrative and operational standards"

· In alignment with the adopted objectives of the ITC's charter, e.g. articulating priorities in support of mission, and decision authority cut points relative to cost, scope, stakeholder and/or customer impact, etc.

· Adopt a process and timeline to reach completion

2) UA/UAA/UAF/UAS Executive level commitment (genuine, broad and sustained over multiple years) to utilize and support the Project Management function and its operations in accordance with standard best practices:

· Transparent, inclusive, complete project vetting, prioritization and planning functions, used for all projects of a minimum scope and magnitude, as defined in IT policy and administrative and operational standards (item 1).

· Transparent project portfolio management, connecting resource planning with project execution

3) Include IR as a primary stakeholder and/or customer in potential modifications to data and applications environment, to prevent data discontinuity and allow UA's data architecture development, maintenance and BI needs to be met (in accordance with cut point criteria defined in IT policy and administrative and operational standards (item 1)). IR function is responsible to set data and data architecture standards to meet trend reporting, operational analysis, and compliance needs. Items to address in this area include, for example:

· Communicate when applications are being adopted and how data will articulate with Banner – whether data source is SaaS or locally hosted, transparency on data structure and how it will articulate; include addition of RPTP snapshots of databases/applications not intended or possible to articulate to Banner, i.e. Adirondack, Lumens, Raiser's Edge, defined to meet IR's and their customer's needs as part of application implementation plan.

· Maintain easily accessible living technical documentation for core data services/products such as RPTP data refresh schedules, reports schema, data structures for RPTP snapshots of Banner, Lumens, Adirondack data, etc.

· When programmers are requested to modify Banner, ensure IR and other stakeholders are consulted and informed, i.e. web time entry solution changed how data flows through Banner, causing surprise issues and rework for IR.

· Expanded management/archiving of RPTP tables and other data services through automated ETL of daily snapshots, allowing for year-over-year operational analysis, i.e. cubes or snapshots with value added fields.

· Support IR in attaching visual analytic software (e.g., dashboards, business intelligence tools) directly to RPTP.

4) Communication & Setting Realistic Expectations. Providing information that is understandable and accurate will prevent any perception of a lack of responsiveness.

· Identify key points of contact for each IT function, at UA, UAF, UAA and UAS. This allows for development of relationships and understanding between IT personnel and IR (or any other function's) personnel.

· Set and clearly communicate realistic service level and timing expectations, updating customers as needed

· Translate the IT organizational structure, functions and responsibilities to layperson speak and communicate to the UA community - explain what IT leaders and staff across the whole system actually do, and indicate who is responsible for what. Right now, organizational structure is stated in undefined IT terms that laypeople (and many others) do not understand or relate to.

We don't have a 5th priority - these 4 are the most important.