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Director
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DATE: March 13, 2018

TO: Legislative Finance Committee

FROM: Shauna Albrecht, Fiscal Analyst

RE: Academic Input on Information Technology Trends

The Chief Information Officers of Montana State University and University of Montana were contacted during summer of 2017 to seek assistance with academic research into trends in the delivery of information technology services within governmental and university organizations. Both CIOs were successful in providing staff with relevant research on the centralized vs. decentralized discussion in higher education. The research papers received are from [Educause Center for Analysis and Research](#) (ECAR), a leading organization in research and information technology in higher education. ECAR analyzes IT trends, practices, data, and collaboration opportunities in higher education.

Below are the highlights from three research papers that are particularly relevant to the LFC interim work plan's study of State Information Technology. The full text of the papers can be found by following the links in the titles.

[Organizational Models for IT Service Delivery and the Evolving IT Organization](#)

- IT organizational models need to be fluid, not set
- Rather than the traditional split of centralized and decentralized, IT is shifting to a more coordinated approach. Allowing for a more deliberate understanding of each part along with the need to be strategic, secure, financially sound, scalable, and responsive of stakeholders
- The drivers under consideration for higher education IT to become fluid, agile, and responsive to their stakeholders are cloud, IT as a service, strategic alignment, data and analytics, and IT funding to create a more intentional system that brings both parts of centralized and decentralized to meet the institution's needs
- The effects of the drivers can create a shared-ownership model, divestment, and a shift of central IT to become more of an advisor and partner
- The effects of divestment should not be taken lightly as they can and may also have negative implications that need to be addressed such as security, inefficiencies, or reducing economies of scale

The Changing Face of IT Service Delivery in Higher Education

- In the study associated with this paper, as of 2015 CIOs were focused on management of infrastructure and technical resources. These same CIOs are seeing a shift in thought to consider vendors, services, and outsourcing rather than the traditional format
- Higher education CIOs are realizing the shift in IT and much of it is financially based. Most higher education institutions are experiencing a decrease in funding while IT expenditures are increasing. The increase in IT expenditures can be related to an increase in cost associated with services and applications, and cost increase due to adopting new technologies. CIOs are assessing cloud computing, shared resources, and outsourcing in order to keep up-to-date with technology growth and the decline in financial resources
- Impacts to workforce was a prominent focus of the paper due to the fear many CIOs and their staff have with the shift in the model to a more vendor-services method. However, many institutions have experienced neither increasing nor decreasing levels of FTE. This needs to be viewed in a case by case scenario in relation to the level and type of change

Calculating the Costs of Distributed IT Staff and Applications

- There are many barriers into calculating the costs of distributed IT as discovered by an Educause and National Association of College and University Business Officers (NACUBO) working group that was established to research this topic, provide some best practices for reporting, and trends
- Measuring distributed IT costs allows for institutions to predict trends and costs allowing them to make strategic and informed decisions on resource allocations to IT
- The group provided recommendations to develop guidelines in assisting institutions with determining their distributed IT costs
- An important shift is for CIOs and Chief Business Officers to collaborate in developing practices to report these costs, and planning for the future costs of IT as institutions shift to a more distributed model

Throughout all of the articles is evidence of the trend towards an IT model that aims to strategically leverage the best aspects of centralized and decentralized organizations. Throughout the customer satisfaction survey and the SITSD case study, the topic of convergence being the correct choice for Montana was brought up. There are many benefits to having centralized services with economies of scale. However, it is clear through all the research presented that an all-or-nothing scenario does not align with the trends for best practices in IT. In fact, higher education has been a leading driver in establishing a distributed model taking the benefits of both centralization and decentralization to create an agile, fluid, and proactive IT solution.