

## Annual report on the IT Council and IT Executive Council

Prepared by the chair of the IT Council: Paul Padley

For: President Leebron and the Faculty Senate

### Introduction:

In April of 2014, the Rice University Task Force on Information Technology produced a report on IT principles, governance and organization. Amongst its recommendations was the formation of an IT Council that reports to an IT Executive Committee. The IT Executive Committee would be comprised of the Provost, IT Council Chair, CIO, VP Administration, and VP Finance. The IT council would have various subcommittees to cover different aspects of IT with the chairs of those committees comprising the IT Council (along with the chair).

The report laid out the following for the IT Council:

*The council is advisory to the CIO and the IT Executive Committee, and replaces the existing Information Technology Advisory Committee. It has the following responsibilities:*

- a. Recommend goals / priorities for the IT units to the IT Executive Committee.*
- b. Recommend priorities for IT investments to the IT Executive Committee as input to the university's annual budget process.*
- c. Understand annual budgets of IT organization(s) in order to provide informed and integrated advice.*
- d. Review and recommend to the IT Executive Committee all new major IT projects at the university.*
- e. Recommend IT policies and procedures.*
- f. Recommend IT standards (e.g., service levels, hardware and software)*

The report also described the role of the IT Executive Committee as follows:

- a. Approve IT goals and priorities for the university.*
- b. Incorporate IT priorities into the university budget process.*
- c. Approve all major IT projects (what constitutes a major project should be determined by the IT Executive Committee) as part of the annual budget review.*
- d. Conduct post-implementation review of major IT projects.*
- e. Oversee, and ensure the effectiveness of the IT principles, governance, and organization.*
- f. Perform an oversight role of the performance of the IT unit(s).*

The formation of the IT Council and establishing how it operates is a work in progress. It is a very new model of governance for IT at Rice, and the attitude has been to try things, and change them as we learn better ways to do things. It has subsequently been decided that it would be good to have two faculty members from the at large university committee sit on the IT council to broaden representation on it (although to date only one such member has been added). In this report we describe the current status of the IT Council and describe some of the recommendations that have been made.

### Formation of the IT Council and its current practices:

The IT Council chair was selected in May 2015 and work began on forming the council and its subcommittees. The initial approach was to start small, not to create a subcommittee for every aspect of IT all at once but rather start with a couple of subcommittees and then expand as needed going forward. It was also decided to keep the membership in the committees small so that there could be effective discussion and decision making.

It is worth making a side remark at this point. The IT Council and its subcommittees are very different in nature from the previous IT Advisory Council and its subcommittees (ITAC). ITAC strove for broad representation from all relevant communities on campus and as a result was quite large. One consequence of this is that it effectively played no advisory role, but rather was used as a forum to present what was happening within IT. While there was potentially an opportunity for feedback from the ITAC this rarely happened. In contrast, the goal of the IT Council is to provide timely and effective advice for decision making and resource allocation by the IT Executive Committee. This is happening and in fact many useful discussions between the IT Council and or its subcommittees and the IT leadership, that are difficult to capture in a report, are taking place. This appears to be helped by the limited size of the committees. However, given the limited size of the committees, it is important that all members of the committees are there to represent the entire university community and not just their own constituencies.

The membership of the subcommittees of the IT Council comes from the faculty and/or user communities. The corresponding representatives from IT who manage the functions that are receiving the advice provide staff support for the committee. They are non-voting members. They provide information and analysis for the deliberations, help organize the meetings, receive advice and keep committees updated on next steps.

In addition to subcommittees it was eventually realized that there was a need for “Working Groups”. For example, the remit of the Research Computing subcommittee is very large, however at the same time, IT needs detailed advice on policies governing the computing clusters on campus. The queuing policy for a particular cluster is a good example of an issue of extreme importance to the users of that facility but not the broader campus research community. It was found that by delegating computing cluster specific issues to a working group, the Research Computing committee could be free to consider issues of interest to the broader Rice research community and not get bogged down in nitty gritty details of narrow focus. It is anticipated as other narrow but important issues arise, “Working Groups” should be formed to address them.

Over the course of the past year, three subcommittees have been formed: Academic Technologies, Administrative Technologies, Research Computing. In addition, one working group has been formed for Shared Research Infrastructure – which is the working group providing guidance of the high performance computing clusters. Below, the membership and activities of these groups will be described.

## Academic Technologies

The membership of the Academic Technologies Subcommittee is

Scott Rixner, Chair (Professor, Computer Science and ECE)

Diane Butler (staff)

Sid Burrus (Professor Emeritus ECE)

Justin Denney (Assoc. Professor, Sociology)

Josh Eyer (Director, Center for Teaching Excellence)

Klara Jelinkova (IT)

Kathy Matthews (Professor, Biochemistry and Cell Biology)

Paul Padley (Ex – Officio)

Renata Ramos (Lecturer, Bioengineering)

Rafael Salaberry (Professor of Humanities, Director, Center for Languages and Communication)

David Tenney (Registrar)

Lesia Tran (Wiess Instructor, Chemistry)

The large issue dealt with by the Academic Technologies subcommittee in the past year was replacement of the Learning Management System. The current system, OwlSpace, is based on an open source platform, Sakai, that is no longer supported. This necessitates its replacement. Evaluation of commercial replacements for this system were underway when the subcommittee was formed and it immediately became its highest priority issue. The result of the extensive discussion and evaluation of the ongoing pilot project was to recommend the adoption of Canvas. Perhaps more importantly, they also provided a detailed set of recommendations to IT outlining how to proceed with the implementation of Canvas in a way that would make the transition as effective and as smooth as possible for the faculty and students.

It should be noted that they identified one issue with this transition that will need to be addressed (by a different group). OwlSpace was used by many groups on campus as a collaboration tool and the replacement, Canvas, is not designed to meet this purpose.

In addition to examining the learning management system used on campus, the subcommittee looked at the current composition of the campus podia. The subcommittee concluded that the basic composition of the podia is sound and did not recommend any changes to it.

Another issue is which Audience Response System (ARS) should IT support for the campus community. Some faculty have found that ARS systems are an effective way to increase student engagement in class. IT has a hardware-based system (that uses physical clickers) that can be deployed to classrooms. The logistics of distributing physical clickers is cumbersome and many systems now allow students to respond using their smart phones or other personally owned devices. In the past year there had been a trial of several new ARS systems but none stood out as a clear winner. After evaluating the results of these trials, the subcommittee recommended a trial of a personal device based version of the system currently supported by IT.

## Administrative Technologies

The membership of the Administrative Technologies subcommittee are:

Paul Padley, Acting Chair

Randy Castiglioni (IT)

Elaine Brewer (Director of Technology, Jones School)

Jana Callan (Chief of Staff, Provost Office)

Brad Fralic (Controller)

Klara Jelinkova (IT)

David McDonald (Director, Residential Colleges)

Rachel Miller (Director of Academic Affairs, Wiess School)

Wayne Robinson (Director of Recruitment and Operations, Human Resources)

Rena Scott (Director of Facilities Business Analytics, FE&P)

David Tenney (Registrar)

The Administrative Technologies subcommittee was not formed until January 2016. To expedite the work of the committee, rather than search for a faculty member to chair the subcommittee, Padley took on the roll – at least temporarily. Ideally, this subcommittee should be chaired by someone else.

A primary focus of this committee has been to provide guidance to IT as to the relative priorities of the extensive list of Administrative IT projects that are underway and that are being contemplated. In addition, the committee has raised a few issues of concern that have been discussed with IT, and work is proceeding to understand how best to address them. It was recommended that to best be able to do this, the committee needs information for each project that gives them an idea of size (hrs needed) and dependency on other projects. IT has been working to provide this information.

One particular concern, that undoubtedly transcends IT, is the reliance on paper-based processes that are prevalent on campus. The subcommittee members strongly believe that the university should be working to eliminate paper based processes as quickly as possible.

The subcommittee expressed to IT the concerns that exists on campus with the user interface to input budget planning information into Hyperion. There was also an extensive discussion of the functionality of Hyperion and the desire to use it by various units to get financial updates. As a consequence of these discussions Finance and IT have been working together to implement improvements to address these concerns.

It is interesting to note that in the context of administrative IT projects, it appeared that it would be desirable to have a pool of programming talent on campus that can be drawn upon using a chargeback mechanism to apply to projects that arise. It turns out the same desire was raised in the context of Research Computing.

## Research Computing

Members of the Research Computing subcommittee are:

Farès El-Dahdah, Chair (Professor, Director of the Humanities Research Center)

Jan Odegard (IT)

Dominic Boyer (Professor, Anthropology)

Anthony Brandt (Assoc. Professor, Shepard School)

Cecilia Clementi (Chair of Cyber Infrastructure Working Group)(Professor, Chemistry)

Keith Cooper (Professor, Computer Science, ECE)

Klara Jelinkova (IT)

Sara Lowman (University Librarian, Vice Provost)

Paul Padley (Ex-officio)

George Phillips (Professor, Biochemistry and Cell Biology, Associate Dean for Research)

It is important to note that the chair of the subcommittee is from the Humanities. This was a deliberate choice as there is strong desire by IT to serve the research computing needs of the entire campus community, and not just traditional scientific and engineering communities that have made heavy use of high performance clusters. A major task undertaken by the committee was to create a description of the various research computing needs on the campus, highlighting the many projects in the humanities and social sciences with a significant computational component.

One clear need that has been identified is for university provided mountable disk storage space. The university already provides cloud based storage through Box, Google drive, and Office 360. This is to be commended and should continue into the future. However, cloud storage does not meet the needs of many researchers, basically you can't run your code on the cloud storage. To do this one must have storage space that is mounted on the computer that is running the code. In all schools of the university computationally based research is growing and along with that the need for mountable data storage.

There is also a clear trend in research towards massive data sets – from 100's of GB to 100's of PB. Mining such large data sets will undoubtedly lead to discoveries in many different disciplines. This part of motivation for the university's data sciences initiative. In order for this initiative to succeed and support research across the campus, there is a clear need for mountable and scalable data storage. The Research Computing committee is advising IT on how best to provide this.

Another issue that came up is the need for a pool of programming talent that can work on projects of limited duration. Many projects have a need for a few months' work from a programmer. However, if one hires a programmer into a position of a few months' duration, one will not attract or retain the best talent. If instead there were a pool of talent on campus that projects could pay to use, there would be the possibility of have a core of skilled programmers that could be applied to research and other projects on campus. How this could practically be implemented is a subject for future discussion.

Finally, it is important to note that the funding climate for research computing is changing. The message being delivered to many grantees is that computing is increasingly considered by the funding agencies as a commodity to be provided by the university, just as the network is. It will be important for the university to be aware of this, and fold it into its fiscal planning.

#### Working group on Cyber Infrastructure

Within the sphere of research computing, there is also a need to provide operational advice on the high performance clusters that IT operates. To address this specific need a working group was formed chaired by Cecilia Clementi. The members are:

Stephen Bradshaw  
Cecilia Clementi (Chair)  
Erik Engquist (staff)  
Klara Jelinkova (IT)  
Alan Levander (Professor, Earth Science)  
Caleb McDaniel (Assoc. Professor, History)  
Jan Odegard (IT)  
Amina Qutub (Assistant Professor, Bioengineering)  
Tayfun Tezduyar (Professor, Mechanical Engineering)  
Moshe Vardi (Professor, Computer Science)

This group has been meeting regularly and provided guidance on the policies implemented on the high performance clusters and the fees charged for their use.

#### IT Council

The IT Council is comprised of

Paul Padley (Chair)  
Farès El-Dahdah  
Scott Rixner  
Caleb McDaniel

In addition the relevant IT people participate in the meetings and discussion:

Jan Odegard  
Randy Castiglione  
Diane Butler  
Klara Jelinkova

Each of the issues raised in this report was brought to the IT Council for further discussion and input. This allows for different perspectives to be brought into the discussion. This also allows for the identification of issues that are impacting various communities. An example of such is Virtual Machines (VMs). In both the Research and Academic computing communities the

suggestion that Rice provide VMs to students and researchers has been brought up. Hence the IT Council has asked that IT explore how to provide VMs in scalable manner.

The IT Council also recommended that high priority be given to implementing a scalable architecture for data storage at Rice. This will have an important impact on both the research and teaching missions of the university. They also endorsed the recommendation that Canvas be adopted as the learning management system and the implementation points raised by the Academic subcommittee.

### IT Executive Committee

The issues raised in this report have all been discussed in the IT Executive Committee.

With regards to the data storage issue, it was agreed that initially the data storage and related infrastructure will be funded from the data science initiative, beginning in FY 2017.. It is important to note that data storage will require ongoing funding into the future.

The IT Executive Committee also agreed with the choice of the learning management system. IT is proceeding to implement the system using a phased roll out approach, which was supported by the IT Council, Research subcommittee and IT Executive.

An issue that was discussed just within the IT Executive Committee was the replacement of desktop and laptop computers throughout the campus community. A significant fraction of IT support is devoted to maintaining antiquated computers. In the School of Natural Sciences, there is a policy that the school replaces computers on a regular cycle. This was a policy in other schools in the past, but during past budget downturns fell by the wayside. This has led to numerous faculty and staff using old and hard to support equipment. To address this the IT Executive committee recommended that these computers be replaced on a 4-year cycle.

In addition, the following projects have been prioritized by the ITEC for FY17.

1. In partnership with the Office of Institutional Research continue improvements to the reporting and data warehousing facility
2. In partnership with the Office of the Registrar implement Course Leaf (course management software)
3. In partnership with the Office of the Vice Provost for Academic Affairs implement a new Faculty Information System based on technology provided by Thomson Reuters.
4. In partnership with the Office of the Vice Provost for Academic Affairs run a pilot of a new cloud based course evaluation system (IDEA Course evaluation).
5. Implement hardware upgrades to university wide systems including: E-mail system, budget planning system, Banner database server, OnBase imaging server and facilities system (FAMIS) amongst others

## Concluding remarks

In the first year of the IT Council a number of important issues have been identified and addressed. Given the fast moving and dynamic nature of IT, it is clear that challenges will continuously arise. It was to respond to these challenges that the governance model for IT at Rice has undergone a fundamental change. This model is still a work in progress and the IT Council and IT Executive Committee will work with IT to adapt the structure outline above as necessary to provide the most effective advice possible.