HARNESSING THE POWER OF CONSUMER IT THROUGH INFORMATION SHARING AT UNC
Executive Summary

We selected the topic of “Collaborating with IT in Higher Education” for our 2019 ULEAD Team Research Project. The purpose of the project is to identify the IT issues impacting the students, faculty, and staff at the University of North Carolina at Chapel Hill (UNC-Chapel Hill). Through qualitative research, including literature review, peer-institution benchmarking, and in-person interviews, we identified several Information Technology (IT) concerns:

1. There is a lack of data, in general, regarding what IT solutions are available to campus.
2. The current purchasing process for IT solutions is unclear and cumbersome.
3. There is a lack of information sharing between individual departments regarding what IT solutions are being implemented, resulting in information silos between campus units.

When employees cannot find the IT solutions that they need through UNC-Chapel Hill it increases the likelihood that they will purchase a product that the university already offers and, potentially, pay more for it since UNC-Chapel Hill does not have a purchasing contract with the vendor. It also increases the probability that employees will download unauthorized applications onto their work devices exposing the university’s network to security threats. When departments purchase their own individual IT solutions it can result in challenges with data integration and maintenance, creating a burden on the IT infrastructure.

To address these issues, we developed a set of actionable recommendations for the university to consider:

1. Collect data from software purchasing transactions.
2. Create an inventory of software and make it accessible to all campus users at help.unc.edu.
3. Improve the customer experience of campus users by leveraging the Service Request and Knowledge Management components in ServiceNow (help.unc.edu).
4. Establish a Consumer IT Working Group focused on learning and sharing information about existing and emerging IT solutions on campus.

These actionable recommendations will make it easier for faculty and staff at UNC-Chapel Hill to find the right IT solution to fit their needs, save the university both time and money, and create an environment that promotes information-sharing between campus units.
Introduction
Information Technology (IT) plays a vital role in higher education. Not only does IT allow students to access information more easily and quickly, it personalizes the educational experience, and promotes collaborative learning. UNC-Chapel Hill is 5th in the US for federal research among universities. The university spends $1.10 billion in research activity annually and is the 11th largest research university in research volume and annual expenditures. ¹ We selected the topic of “Collaborating with IT in Higher Education” for our 2019 ULEAD Team research project because the students, faculty, and staff at UNC-Chapel Hill need access to the best technology in order to fulfill the university’s mission of teaching, research, and public service.

Objective
The purpose of our project was to identify barriers to the adoption of consumer-driven technologies at UNC-Chapel Hill; and to provide actionable recommendations to address those barriers that will further strengthen the existing partnership between ITS and campus units. The recommended solutions serve the students, faculty, and staff at UNC-Chapel Hill and accelerate the adoption of consumer-driven technologies while ensuring data security, promoting fiscal responsibility, and enabling data integration with campus-wide enterprise solutions.

Background
The original prompt that we were given for the project asked us to consider the consumerization of IT and what is the appropriate model for the role of IT on campus.

The consumerization of IT—a more do-it-yourself approach to the control of technology in higher education—is the latest form of what has been called “shadow IT.” At some universities, shadow IT becomes known only when a problem surfaces. Universities struggle with the tension between academic freedom and administrative control. When University employees deploy solutions without the knowledge or help of central IT, how much should IT get involved in supporting those tech operations? How far should IT go in clamping down on rogue behavior? In the face of diminished control over technology decision-making, just what is the appropriate model for the role of IT on campus?

The consumerization of IT, also known as Consumer IT, is the cycle of technology emerging first in the consumer market and then spreading to the organization. This is drastically different from a few decades ago when technology started at the enterprise level and then slowly trickled down to everyday users. ² The consumerization of technology allows individuals to own and manage a variety of technologies. Students,

faculty, and staff bring their own devices, software, apps, and cloud-based technology to work promoting a bring-your-own-everything (BYOE) standard. ³

Consumer IT has shifted the diffusion of technology innovation from top-down to bottom-up. Consumers first select popular devices and then introduce them to workplace. While the consumerization of IT sparks innovation, increases productivity, and promotes collaboration, it also presents significant challenges for higher education institutions. The concerns include security risks, compliance implications, and increased demands placed on the IT department. Higher education institutions must fluidly accommodate user needs while securing private information and maintaining data integrity, and UNC-Chapel Hill is no exception.

Research

We were interested in learning what IT issues are currently impacting UNC-Chapel Hill. As non-IT professionals, we had to do some initial research to learn how IT at UNC-Chapel Hill worked. By reviewing UNC's Information Technology Services (ITS) website, we gained a general understanding of the IT structure at UNC-Chapel Hill.

Information Technology Services’ mission is to accelerate the University’s academic and research pursuits by providing accessible, reliable, efficient, scalable and innovative technologies that enable faculty, students and staff to realize their goals of leading breakthrough change to improve society and help solve the greatest problems for our state, our nation and our global community.

ITS leads UNC-Chapel Hill in planning, implementing and maintaining the University’s technology services. They partner with a variety of stakeholders across campus to deliver reliable, secure and satisfying IT capabilities to the students, faculty, and staff at UNC-Chapel Hill. ⁴ The following divisions make up ITS:

- Office of the CIO
- Communication Technologies
- Enterprise Applications
- Finance & Administration
- Infrastructure & Operations
- Research Computing
- Security, Privacy & Identity Management
- Teaching & Learning
- User Support & Engagement


One of the focus areas for the Office of the CIO is IT Governance. Gartner defines IT Governance as, “The processes that ensure the effective and efficient use of IT in enabling an organization to achieve its goals”. IT Governance provides processes and structures that specify for all campus IT:

- Who makes decisions pertaining to goals, policies, investment, infrastructure and architectures
- Who provides input and analyzes issues
- Who is held responsible and accountable
- Who settles disputes
- How decisions are made, implemented and managed

In-person Interviews

To learn more about UNC-Chapel Hill’s IT structure and the IT issues impacting the campus community, we interviewed members of ITS Leadership and the Information Technology Executive Council (ITEC). This group is comprised of senior-level administrators who bear primary responsibility for technology-related support and infrastructure within their respective schools or divisions. Below is a list of the individuals we interviewed and the questions that were posed.

ITS Leadership

- Mike Barker, Interim ITS Vice Chancellor and CIO
- Kate Hash, ITS Chief of Staff, ITS - Vice Chancellor - CIO
- Kim Stahl, Senior Policy and Process Lead, ITS – Vice Chancellor - CIO

Information Technology Executive Council (ITEC)

- Scott Wilber, Director, Client Systems and Services, Research Information Systems, and ITEC Chair
- Calvin Groves, IT Director School of Education, and ITEC Vice Chair

Interviews Questions for ITS Leadership & ITEC

- What does IT governance look like and who is involved?
- How has Consumer IT impacted the organization?
- What Consumer IT solutions are being utilized by campus?
- What data is available on the use of consumer IT solutions?
- How can we go about obtaining data on Consumer IT solutions?
- What do you see as the top three benefits of adopting consumer-driven IT solutions?
- What do you see as the three top issues/concerns related to consumer IT on campus?
- What, if anything, has been done to address these issues?
- What role does central IT play in helping schools and divisions adopt new technology?
- When University employees deploy solutions without the knowledge or help of central IT, how much should IT get involved in supporting those tech operations?
- How far should IT go in clamping down on rogue behavior?

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• In the face of diminished control over technology decision-making, just what is the appropriate model for the role of IT on campus?
• If there was one thing that you would like to see addressed / resolved as a result of the ULEAD project, what would that be?
• Who else should we talk to?

We interviewed additional stakeholders across campus later in the process and several employees from the Procurement Office. We developed a set of open-ended questions tailored to the topic of interest for each interview. Below is a list of the names of the individuals we interviewed.

Additional Key Informants
• Vicki Bradley, Associate Vice Chancellor, Workforce Strategy, Equity, and Engagement, Office of Vice Chancellor
• Brenda Carpen, IT Manager, ITS-IT Infrastructure
• Mechelle Clayton, Interim Assistant Vice Chancellor, ITS-Enterprise Applications - ConnectCarolina
• Gary Kirk, Broadcast & Emerging Media Engineer, Hussman School of Journalism and Media
• Dave Maldonado, Director of Information Technology, School of Pharmacy - Information Technology
• Alicia Waymack, IT Category Manager, Purchasing Services
• Danesha Little, Purchasing Agent, Purchasing Services

Peer Institution Research
We reached out to a few universities in the UNC System, the UNC System Office, and several institutions UNC System-Defined Peer Group. All the institutions were contacted via email except for North Carolina State University. We reviewed each institution’s website to determine who the appropriate IT person would be to contact and sent that person an email.

Institutions Contacted:
• North Carolina Central University, Patrice J. Walker, Director, Client Services
• UNC System Office, Allen R. Lakomiak, Director of Director of Infrastructure & Ops, Applications Dev & UNC Online
• University of California, Los Angeles, Constance Jordan, Associate Director, Procurement & Asset Management
• University of California-Berkeley, Larry Conrad, Chief Information Officer (CIO)
• University of Maryland, Jeffrey Hollingsworth, CIO
• University of Michigan-Ann Arbor, Vashni Santee, Vice President for IT & CIO
• North Carolina State University, Office of Information Technology (OIT) Walk-In Center
Email Body:

I am a participant in the University Leadership Education and Development (ULEAD) program sponsored by the Office of Human Resources at the University of North Carolina at Chapel Hill. The ULEAD program includes team projects that focus on real higher education issues and are expected to produce practical and actionable outcomes for UNC-Chapel Hill, NCCU and the UNC System.

My team is doing a project on Information Technology (IT) in higher education. We found that a lack of information sharing across campus can be a barrier for individual departments to learn about existing and emerging IT solutions. How does your institution facilitate information sharing between individual departments across campus regarding existing and emerging IT solutions?

Unfortunately, none of the individuals that we contacted via email responded. However, we were able to speak with various staff members from the Office of Information Technology (OIT) by visiting the OIT Walk-In Center on NCSU’s campus. We also conducted peer-institution research by reviewing many of the research publications on the EDUCAUSE website. EDUCAUSE is a nonprofit association whose mission is to advance higher education using information technology.7

Findings

The Need for Digital Transformation

The consumerization of Consumer IT has caused dramatic changes in higher education and created new social patterns, especially around data consumption and mobility. Today’s students are not only tech savvy, they are on the go, and expect to be able to log in from any device at any time. Higher education institutions can adapt to these changes by embracing Digital Transformation (Dx). EDUCAUSE defines Dx as, “A series of deep and coordinated culture, workforce, and technology shifts that enable new educational and operating models and transform an institution’s operations, strategic directions, and value proposition.” 8 Many colleges and universities have already embarked on a journey of Dx by incorporating digital technologies into every area of business, including North Carolina State University (NCSU).

Partners in Innovation: A Strategic Plan for IT at NC State, 2014-2020

From our literature review, we learned that NCSU developed a five-year IT strategic plan to redesign their IT governance model in 2014. The objectives of the plan are to improve the design and utility of IT governance, bring IT governance into alignment with the University’s mission, and put IT governance in a position to prepare campus for the rapid technology changes that will occur in IT over the next few years. Our discussions with staff members from the OIT Walk-In Center at NCSU primarily centered on the university’s implementation of ServiceNow, a cloud-based platform for Information Technology Service Management (ITSM). In 2014, NCSU decided to replace its Remedy call tracking system with ServiceNow offering campus a richer and more diverse set of tools for IT service management. OIT rolled out ServiceNow to campus in March 2015.

In 2015, NCSU came out with a new IT strategic initiative to expand the ServiceNow application beyond its initial implementation of incident tracking and knowledge management. The ServiceNow platform can capture information that can be used for resource planning and prioritization and not just for the IT community.

In 2019, NCSU launched a new IT Service Portal running on the ServiceNow platform, to replace the NC State Help Desk website. The portal is a central location where students, faculty, and staff can submit problems and requests to the OIT. It also gives users access to knowledge articles - or helpful information about specific OIT services.

NCSU had very positive things to say about the ServiceNow platform. The request management and knowledge management applications within ServiceNow make it easy for employees to connect with IT staff when they have an issue or need information. From an IT perspective, NCSU feels that ServiceNow has been extremely beneficial in automating workflows and streamlines service delivery.

ServiceNow at UNC-Chapel Hill

ITS launched a new help.unc.edu and the underlying system used for support, called ServiceNow, on July 30, 2019. The new website and system bring many benefits to users, including the ability to find answers faster with better knowledge articles, track requests and support tickets and chat live with IT support staff. The university’s new ServiceNow platform received 10,000 incident tickets within the first month of implementation, of which 9,700 were resolved. Additionally, 8,000 service requests were received, one major incident was logged, 155 changes were submitted, and 228 new knowledge base articles were created. After our discussions with NCSU, we were excited to learn that UNC-Chapel implemented the ServiceNow ITSM platform just a few months before we began our ULEAD Team Project.

Implications of Distributed IT

From our in-person interviews with ITS Leadership and members of ITEC, we learned that the IT organizational structure at UNC-Chapel Hill is decentralized. Authority and decision-making power are delegated to senior-level administrators across campus who are oversee the IT infrastructure within their given schools or units.


The distributed nature of IT at UNC provides allows each school or unit to choose its own hardware and software based on its needs. While this allows many schools to remain competitive outside of the University, it also leads to challenges internally.

**Information Silos**
Two themes kept coming up our discussions with IT professionals on UNC’s campus were a lack of available data and information silos. Individual groups possess information about existing and emerging IT solutions that could help colleagues meet their goals, but that information often remains cloistered in departmental silos, unshared and unused to its full potential. We learned that are several different schools interested in purchasing event management software. They have the option to purchase their own individual IT solutions, but does it make sense for each of them to have their own proprietary system? Over time, duplication and redundancies can occur that impact efficiencies, cost, and security risks.

If individual departments knew what IT solutions other groups on campus had already implemented, all these concerns could be addressed proactively. The primary issue that we decided to tackle is a lack of information-sharing between individual units and how that creates barriers to campus adopting new Consumer IT solutions.
Plan of Action

Recommendation 1: Collect Data
The first recommendation for breaking down the information silos is creating a university-wide comprehensive software inventory for solutions outside of those that are university pre-approved. This would allow someone that is searching for a new software solution such as event management software to easily search UNC’s site for options. However, it is necessary to understand the prevalent hurdles for creating this and how to overcome them. Currently, there are two staff members in purchasing services who manage software contracts for UNC-Chapel Hill, it would create undue burden for two people to try to additionally manually track all of the software information therefore the need to create an automated solution is ideal for ensuring its success and continuity. We looked at several components for making up the inventory and came up with three to cast a broad net.

1. Gathering purchasing data by account code
2. Digitizing software forms
3. Surveying UNC’s ITEC group.

During our research on “how does a person purchase software” it became apparent that even that wasn’t clear. To capture high quality data, we had to start at the beginning of the software process to figure out a way to make it clear to purchasers the proper way to purchase software. Communicating the software procurement process and finding ways to fully digitize the process would be ideal for streamlining software purchasing and creating clean data to feed a software inventory system.

Communicate Software Procurement Process
Currently there is not a simple way to find a succinct written process on different steps for purchasing software. There are three ways to make purchases in general: purchasing card, voucher and purchase request. Purchasing software should route through as a purchasing request no matter the dollar value, which predominantly is for items $5,000 or more. Not everyone is aware of this process and purchasing software under $5,000 is bypassed by using the purchasing card. We recommend that the Procurement Office create a communication plan to clarify the correct process for purchasing software to include:

- Purchasing services staff will create an annual memo explaining the software purchase process and send to all UNC-Chapel Hill no-reply email
- Purchasing services staff will update the procurement services and materials management’s website to include the succinct how-to process for purchasing software and account codes available for use.
- Finance and Operations webmaster ensure the process is “searchable” by key terms e.g.: “software purchase” on the Purchasing Services website.11
- Purchasing services staff will send an annual reminder of the software purchase process to all UNC-Chapel Hill no-reply email
- Service center for excellence communications and training staff will add information about software process to trainings with input from procurement services and materials management staff, including:
  - Purchasing Card Computer-Based Training

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- Purchase Requisitions
- E-Procurement Computer-Based Training

The main benefits to increased communication are that it is low-cost, has limited barriers, and will help create tools for cleaner and better data to create the software inventory.

Once the software purchasing process is recomunicated, gathering the information for the software inventory can begin.

**Gather Purchasing Data**

The first component of data for this inventory is gathering all the financial transactions data for all fund types with these account codes:

<table>
<thead>
<tr>
<th>Account Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>524440</td>
<td>Maint Agree-Other Software</td>
</tr>
<tr>
<td>524450</td>
<td>Maint Agree-WAN Software</td>
</tr>
<tr>
<td>524520</td>
<td>Maint Agree-PC Software</td>
</tr>
<tr>
<td>524530</td>
<td>Maint Agree-Server Software</td>
</tr>
<tr>
<td>524940</td>
<td>Rent/Lease-PC Software</td>
</tr>
<tr>
<td>524950</td>
<td>Rent/Lease-Server Software</td>
</tr>
<tr>
<td>527242</td>
<td>Software Services</td>
</tr>
<tr>
<td>527261</td>
<td>Managed Cloud Software</td>
</tr>
<tr>
<td>527310</td>
<td>Software Subscriptions</td>
</tr>
<tr>
<td>531210</td>
<td>Supplies-Software - Licensing</td>
</tr>
<tr>
<td>546370</td>
<td>Library-Software</td>
</tr>
<tr>
<td>547110</td>
<td>Computer Software Over $100K</td>
</tr>
<tr>
<td>547120</td>
<td>Software-WAN</td>
</tr>
<tr>
<td>547130</td>
<td>Non WAN PC Software</td>
</tr>
<tr>
<td>547140</td>
<td>NW Server Software</td>
</tr>
<tr>
<td>547150</td>
<td>IT Security Software</td>
</tr>
<tr>
<td>547210</td>
<td>Mainframe Software</td>
</tr>
</tbody>
</table>

This step gathers a majority of the software purchases, however, would involve additional data “decoration” for the inventory beyond what is readily available on the face of ConnectCarolina transaction such as the vendor, date, department, contact, and amount. The purpose, version, developer, category, type of license, expiration date, platform and technical support would all involve looking at the invoice attached to the purchase. We propose this additional information search be provided by ITS user support and engagement team.

However, since account code use during purchasing is not strictly controlled purchasers can just as easily use a non-software account code such as 537210 (educational supplies) during a purchase causing it to not be captured in the software financial transactions. For instances like this it becomes necessary to gather the rest of the data from additional sources.
Digitize Software Forms

The second source of data for the inventory is digitalizing software forms through ServiceNow. There are pre-approved software solutions available through UNC’s software acquisition webpage.12

However, for solutions outside of the pre-approved list the proper procedure is to submit software purchases a purchase order, even though for most cases this would only be required for items over $5,000. Additionally, if it involves sensitive data, the Data Protection Checklist is also required (see below).

The Data Protection Checklist verifies whether a new software purchase involves sensitive data. The purchaser is required to attest that the requested IT solution does not involve access to sensitive data. If it does, the form routes through necessary approvals and can add weeks to months of time to the purchasing process. We recommend that the checklist become digitalized. This business process improvement would reduce the

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administrative burden and timeline while ensuring that software using sensitive data is properly vetted and captured for the inventory. Additionally, the checklist would be expanded to capture the following information:

- **Item Description**
  - Name
  - Description
  - Version
  - Category

- **Purchase Information**
  - Price

- **License information**
  - Type
  - Expiration/Renewal Date
  - Platform
  - Technical Support Available (Yes or No)

We propose that as part of this process a digital version of the data protection checklist is created that electronically routes through ServiceNow workflow to the appropriate persons. This solution would be used for purchasing for any time a software purchase is made and serve UNC-Chapel Hill purchasers, administrative staff, ITS, data stewards.

To successfully implement this solution the following people would need to be involved:

- Data security team who can map out specification for workflow (i.e.: who will approve which types of sensitive data)
- IT Specialist who is able to create and implement steps for flow
- IT Specialist who can program fields and feed from flow to Software inventory
- Data stewards to inform of the change in process

The data security team partnered with purchasing office would be responsible for implementing this change. It would take 3 months of planning and 3 months of implementation with the cost being people’s time. The recommended solutions would be measured by user input through ServiceNow and the number of incidents of software requested through ServiceNow remedy requests in a year over year comparison.

**Survey ITEC**

The third component of the inventory is an annual survey in Microsoft Office forms to members of Information Technology Executive Council. This survey would be sent annually from ITS user support and engagement division to ITEC to ask:

1. **What new software solutions have you implemented?**
   - a. Name
   - b. Purpose
   - c. Version
   - d. Vendor
   - e. Category

2. **Who was the purchaser?**
   - a. Department Name
   - b. Contact
   - c. Date
d. Price

3. License information available?
   a. Type of license (annual, perpetual, etc.)
   b. Expiration/Renewal Data
   c. Platform
   d. Technical Support Available (Yes/No)

The information will be gathered from the responses section and exported into excel.

**Recommendation 2: IT Software Inventory**

Together, the transaction data, digitalized data protection checklist data, and ITEC survey data will be normalized to create the software solution inventory and, in some cases, may require additional data “decoration” for missing field information. The proposal is the ITS user support and engagement division set up the data to automatically feed from these three sources regularly. Additionally, this division would manage the continuous updates of this information. The date of the most recent update will be including in the inventory with the following fields:

The software inventory will be searchable and will include the following fields:

- **Item Description**
  - Name
  - Description
  - Version
  - Developer
  - Category

- **Purchase Information**
  - Date
  - Department/Unit
  - Contact
  - Price

- **License information**
  - Type
  - Expiration/Renewal Date
  - Platform
  - Technical Support Available (Yes or No)

Below is a sample of what the inventory may look like using the above fields:

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Purchase Information</th>
<th>License Information</th>
<th>Technical Support Available (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Date</td>
<td>Type</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Department/Unit</td>
<td>Exp/Renewal Date</td>
<td></td>
</tr>
<tr>
<td>Version</td>
<td>Contact</td>
<td>Platform</td>
<td></td>
</tr>
<tr>
<td>Developer</td>
<td>Price</td>
<td>Technical Support Available (Yes or No)</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Version</th>
<th>Developer</th>
<th>Category</th>
<th>Date</th>
<th>Dept./Unit</th>
<th>Contact</th>
<th>Price</th>
<th>Type</th>
<th>Exp/Renewal Date</th>
<th>Platform</th>
<th>Technical Support Available (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft</td>
<td>SharePoint</td>
<td>16.0.0</td>
<td>Microsoft</td>
<td>Office</td>
<td>11/1/2019</td>
<td>HR</td>
<td>John</td>
<td>$200.00</td>
<td>Annual</td>
<td>11/1/2020</td>
<td>Windows</td>
<td>Yes</td>
</tr>
<tr>
<td>Zoho</td>
<td>Event Management</td>
<td>1.1.0.0</td>
<td>May Cook Inc</td>
<td>Event Management</td>
<td>11/1/19</td>
<td>Human Resources</td>
<td>Joe Smith</td>
<td>$250.00</td>
<td>Perpetual</td>
<td>Never</td>
<td>Windows</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Benefits
The inventory will meet multiple needs simultaneously including:

- Students and employees will be able to refer to the information contained in the inventory to help them narrow down their software choices easily
- ITS customer support and engagement team can use the inventory to follow user trends and to get a better sense of emerging needs on campus.

To put it simply, information sharing will improve and ITS can more proactivity address campus software needs.

Recommendation 3: ServiceNow
Once all the data is gathered for the software solution inventory an easily accessible tool for all software purchasers is crucial. By researching tools available at UNC-Chapel Hill such as ServiceNow and how peers such as N.C. State are tackling this problem, we propose utilizing ServiceNow to store the software inventory in the Knowledge Management.

ServiceNow is accessible to all of UNC-Chapel Hill with ONYEN access making it a secure platform for sharing data. There are two components of ServiceNow that will be expanded to improve information sharing, Customer Service Management and Knowledge Management. ServiceNow’s Customer Service Management (CSM) solution enables the University to resolve issues from end-to-end, to fix problems proactively, and drive action to instantly take care of common requests. ServiceNow quickly routes customer issues to the appropriately skilled agents, and customers are provided with self-service options, including automated solutions to recurring requests, conversational answers from a chatbot, knowledgebase articles, and an online community of peers and experts. When departments are seeking IT software solutions, many prefer to find an answer themselves rather than contacting the ITS helpdesk. But, with ServiceNow employees can find answers to their questions in Knowledge Management and discover solutions by engaging with peers and experts in Communities.14

ServiceNow not only would house the inventory in the Knowledge base, it could be expanded to include Knowledge articles submitted by IT professionals on varying software solutions on campus. Therefore, if a user is searching for a software solution in the inventory, they could easily move to the knowledge articles for additional information. If users are unable to find what they need they could then submit a help request using the service management component. ServiceNow would also lend itself to improve customer experience by being one website (help.unc.edu) to make searching more streamline by leveraging the service request and knowledge management components. The IT leadership could use the information gathered to figure out common software solutions being requested and gain better buying power to meet more campus wide needs.

The software inventory would be continuously updated using the data collected.

As a result of all the information sharing and help tools residing in one place it makes it easier in the long-term some something like an Artificial Intelligence engine to be embedded in ServiceNow collecting the data about the most common requests and questions the ITS helpdesk is receiving from campus users to help guide users to the correct place quickly.

https://www.servicenow.com/.
Recommendation 4: Consumer IT Working Group

Information Sharing through People Networks

When it comes to information technology, it is important to recognize that information often resides with people. UNC-Chapel Hill is the largest of the 16 campuses in the UNC system. The Chapel Hill campus alone serves 30,000 students and has over 13,000 permanent employees. The size of our institutions becomes both the source of their strategic advantage and a vulnerability.

On one hand, it guarantees that at any given moment there are multiple departments and individuals who become early adopters of new technology. As members of the UNC community, we benefit from the power of weak ties. When a UNC student or an employee is looking for the best technology, the information may not be readily available within his or her immediate circle of personal connections. However, someone they know is likely to be connected to someone else with information about the IT service or product.

At the same time, the system has two important limitations that impede effective information sharing:
1. The benefit is only realized if one knows who to ask for information; and
2. The knowledge is kept by individuals, so the system is susceptible to a single point of failure. When that person leaves the University, the information often leaves with them.

Communities of Practice
To solve this problem, we propose leveraging professional networks and interest groups on UNC campuses to promote cross-pollination of ideas about existing and emerging technologies. We refer to these networks as ‘communities of practice’.

Etienne and Beverly Wenger-Trayner (www.wenger-trayner.com) describe communities of practice as ‘groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly’.

For the purposes of this research, we primarily focused on the IT professional community. However, there are many other groups and networks on campus interested in the latest technology, such as student organizations, marketing and communication professionals, researchers, business managers and administrators. The communities of practice range from organized and highly structured to informal special interest groups that emerge organically. Some are permanent and some are project based and are dissolved upon the project completion.

Our ULEAD team believes that there is a strong business case for using communities of practice to share information about consumer IT. The advantages include an increased bargaining power with vendors of IT software solutions and less time spent on researching a service or a product. Multiple user perspectives are also more likely to result in better purchasing decisions and superior quality of IT products. In some cases, communities of practice can even accelerate the adoption of a consumer-driven IT product expanding from a one-department solution to a campus-wide system.

**Consumer IT Working Group**

To leverage the power of communities of practice, we propose establishing a new Consumer IT (CIT) Working Group – a network of individuals with the focus on sharing information about existing and emerging IT solutions on campus. Structurally, the CIT group can be established as a subgroup within the existing Carolina Technology Consultants community.

We envision that, in the long term, membership in the CIT group must go beyond the IT community and may include both UNC-Chapel Hill and NC Central University. In addition to representatives from Information Technology Services, ‘service owners’, departmental IT teams, this group should engage members of other functional groups, including ‘owners’ of departmental solutions.
We propose that the CIT group partners with schools, departments and units on campus to help new UNC employees make early connections within the network. For example, an option to join this group can be incorporated into a departmental new employee onboarding program.

To facilitate interactions between the members, we recommend setting up regular group meetings which could be in-person or via zoom for remote participants. These can be used for discussions or to invite vendors to present a new IT solution to the whole group.

A common challenge that many similar efforts have faced in the past comes when an initial wave of enthusiasm is followed by a declining group membership and little to no activity. To address this concern, we propose a model of fluid participation. We do not expect all members of this community to engage in every meeting and discussion. Instead, we recommend leveraging technology to keep the members appraised of the upcoming events so that individuals can choose to participate when the topic matches their functional interests and business needs.

The tools for online collaboration may include a chat space for discussions about available and emerging technologies. These online forums can also be used as a vehicle to publicize successes and cross-departmental partnerships. The group may choose to use the Microsoft Teams and SharePoint sites as a short-to-mid-term platform for collaboration. In the long-term, we would like to propose that the University invests in researching other online collaboration tools, including a ServiceNow Communities application.

First introduced in 2017, the ServiceNow Communities application enables organizations to “connect, engage and collaborate with […] employees, customers, partners and prospects. Users can get quick responses to their issues by posting questions, reviewing blogs or videos, and searching for previous discussions. Users can also subscribe to forums and topics and provide feedback on content they find useful.”

Next steps
We would like to propose the following actions to be implemented within the first 12 months:

- Appoint the project manager and a task force selected from the members of the CTC community to solicit interest in forming the Consumer IT working group.
- Design and create a collaboration space using Microsoft Teams.
- Conduct a cost-benefit analysis to assess the feasibility of switching to ServiceNow Communities as a long-term solution for online collaboration.
- Advertise and promote the group to the University constituents to attract additional members.
- Create a system for tracking inter-departmental partnerships facilitated through the Consumer IT Working Group.

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Summary

While investigating the impact of Consumer IT at Carolina, we learned that there is a lack of data regarding what IT solutions are available to faculty at staff at UNC-Chapel Hill. We also discovered that an information-sharing between individual units creates barriers to campus adopting new IT solutions, which in turn, slows down innovation. To address this issues, we suggest that ITS partner with the Procurement Office to streamline the purchasing process for IT solutions and to collect data so that an IT Solution Inventory can be created and implemented into ServiceNow, a central online hub that all campus users can access. Additionally, we recommend that the university leverage the power of COPs to promote cross-pollination of ideas about new technologies by establishing a Consumer IT Working Group. This group will include both IT and non-IT professionals at UNC-Chapel Hill and will be charged with creating a mutually supportive learning community that shares technology and business best practices across campus to support the university’s mission of teaching, research and public service.
Bibliography


