Bellevue College, Information Resources
Strategic Plan

Strategy versus Reaction

Bellevue College
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Introduction

Bellevue College (BC) has been a leader in technology for many years’ BC has developed many applications that have benefited many colleges within the Washington State Community and Technical College System (CTC). BC has been the state’s leader in online delivery since online delivery existed. These many accomplishments were made possible by a tireless dedication from the technology staff and a commitment to excellence by the college faculty and executive administrators. The time has come for a new vision of excellence, a new dedication to leadership not only within the CTC system but across the nation. The current state of technology at BC is a result of having to react to the exponential growth of the technology industry and the college. A demand for new and emerging technologies forced many investments and decisions without the opportunity for strategic decision making. This is not an uncommon scenario across higher education in the United States, in fact it is the norm. This strategic plan will outline a vision and roadmap designed to build a solid foundation of technology utilizing all available resources and taking the time to invest in quality research that will provide evidence for wise, long term investments.

This is not intended to be a work plan, it is intended to provide a vision for the next two years of technology investment and development at Bellevue College. The management team of the Information Resources Division at Bellevue College will write work plans that will reflect the vision of this strategy and enable the college to fulfill its mission.
The Three Layers of the Foundation

The majority of this vision will focus on the foundation of technology at BC. There are three major components to this foundation. The first of these is the Infrastructure Layer. The infrastructure layer is composed of the electronics and processing power that everything else relies on. Think of it as the transportation system of any metro area but instead of pavement and rail systems this layer is mostly comprised of servers and network switching equipment. The BC system is in need of major upgrades and adoption of the “cloud” paradigm. In this strategy when reference is made to the “cloud” it is very simply defined as a place to access technology services and the experience of that access is identical regardless of your location, on or off campus.

The second layer to address is the Information Layer, which provides the evidence for decision making and the assurance that the college is addressing its student’s needs. Obviously this layer involves data bases but it will also include the development of an architecture that ensures that the data created and collected by the college is connected in a way that exposes this critical layer to everyone needing resources to provide its students the very best advantage possible. The college has an operational data store that can be leveraged as the central nervous system that connects hundreds of data sources on campus and routes the data to reports, applications and services that are used to serve its student’s needs.

The third layer is the Interaction Layer. This will involve web services, data integration and applications that empower staff, faculty and students with the tools they need to succeed. Intranets and portals are fading into history, today it is all about the app. This vision will utilize this layer to focus on delivering services for classrooms, administrative offices and to the homes of students reaching for their dreams. BC’s Information Resources Division has built a team of software engineers and user experience design experts that will provide an advantage in setting the standard for information delivery. Add to that the radio and TV service and BC is poised to present the most robust end user experience available.

There are many details that fall in and around the three layers that have been outlined. The technology world is in the midst of a paradigm shift, specifically when working with desktop technologies. All things virtual, mobile and most importantly all things accessible are the themes that dominate the landscape ahead. Bellevue College is poised to take advantage of this opportunity and is setting its sights on being a leader in the nation, not just in the state of Washington. Classrooms of the 21st century will also need to change, transparencies and VHS tapes are in the past. Classrooms should empower instructors with tools that transcend the classroom. If it can be used online it can be used face to face. Contrary to popular belief the bricks and mortar classroom of the last several centuries are not
fading away, they are just changing. Evidence shows that students who have access to online tools while still spending some time in the classroom, what is called hybrid delivery, outperform both face to face and online delivery methods.

As this plan unfolds, IR will partner with Student Services and the Office of Equity and Pluralism to map the student lifecycle. This map will illustrate the steps a student has to take in order to apply, register, and complete their courses on the way to a degree. It will expose the bottlenecks and inefficiencies in how students are routed through the maze of procedures as well as showing the areas where the college should be most available to students to help them make that next step beyond the tipping point of dropping out. This strategy and vision will serve to build a foundation that will ultimately support the smoothest college life cycle BC can provide its students.

The process of design and implementation will establish the foundation as described but there will be many parallel activities. Instructional Technologies will need to advance as the needs of students advance and plans are already underway to develop a constant dialogue between technical staff and faculty, utilizing the tremendous asset of the Faculty Commons. Before this academic year ends an open testing and research center or “sandbox” will be put together in the faculty commons where faculty can work with new technologies and provide feedback on how it can be used. Forums engaging faculty in a discussion about their needs are critical in order for the college fulfill their needs. Information Resources will not be telling faculty what to use but rather consulting with them as the experts of their craft and facilitating their needs.

Information Resources will also continue its dialogue with students. They provide honest and timely information in how technology and information services are working for them. Students are our mission and establishing quarterly focus groups at the very least along with a close working relationship with the Associated Student Government, can ensure that the students voice is heard and guides this vision.
The Detail

Infrastructure Layer

Components contributing to the Infrastructure Layer for the foundation have already begun. Last year the college made substantial investments in data storage; a major component in establishing the data center as an enterprise class private cloud. The concepts of strategic purchasing were introduced during this procurement, research, design and then investment.

The next steps in building this foundation will utilize consultants to analyze the college network, both wired and wireless. Based on configuration recommendations, the college will evaluate the current state of network equipment and determine what investments need to be made to support the demand on the college network for years to come. Depending on resources available the network phase of the strategy should be complete by January 2014. The third major component to building the Infrastructure layer is a plan to transform the server environment. Moving from physical servers to virtual servers along with a sensible use of hosting and “software as a service” models are at the core of this plan. This portion of the Infrastructure layer will take the most time to complete and in fact may be changing for years to come. However, the bulk of this migration will be complete in two years. The three components outlined, storage, servers and networking all work together to create the “cloud” experience. This means the end user experience in accessing college services will be identical regardless of the user’s location and regardless of the service being accessed. Principals such as single point of authentication and user experience design standards will ensure this.

Desktop technologies have evolved and are continuing to evolve, requiring support for the use of portable devices such as iPads and other slate devices. The traditional reliance on a box sitting at a user’s desk with all the computing power is gone; that power now resides in the data center or private cloud. The desktop will simply be a device that provides access to the services and information tools needed to learn, teach or administrate the college. The debate over operating systems and security at the device are almost history. The focus will turn to building an Infrastructure layer that presents the applications and services that lead to student success.

Information Layer

Bellevue College has vast amounts of data in a vast number of locations. All of the college’s data has value, however the more disconnected or decentralized it is, the lower its potential value. Data’s value can be calculated in several ways, we use it to measure progress toward goals or in reporting on accountability measures. Data is also used to drive services, communication tools and applications. The most important value data carries is in providing evidence for decision making. The more data that can be centrally gathered and organized, the more complete the picture of evidence becomes. This is the motivation to design, then implement an enterprise data architecture plan that connects, compiles, organizes and makes available all of the Bellevue College data. This will be a difficult task but it is not
It is unreasonable to expect completion within the next 24 months. Several variables will impact the length of time needed to complete this work. The first of those is establishing data governance. This will guide the compilation and inform the organization of the data so it is easily understood and consumed. Resourcing for this project will be critical to its success as it goes beyond technology and delves deep into the understanding of what the data means and represents. Information Resources will partner closely with the Institutional Research office to guide this work. Availability of resources in both of these areas will impact the timeline. This layer is impacted by the prerequisite work of the Infrastructure layer, but some of the work can run in parallel. It is imperative that this layer is complete and functional prior to the college implementing the new ERP system funded and governed by the state board.

Bellevue College has almost 4000 different databases and tables of data and only a few of them are connected to the operational data store (ODS). The ODS acts as a pump or distribution center, it connects to the various data sources and channels that information to various locations, warehouses for research, dashboards or reporting tools and many different types of applications. The college already has a functioning ODS in place and several data sources are configured. The implementation plan will identify data sources that should be mapped and what data sources are redundant and can be replaced with data from the ODS instead of running in an isolated fashion. Once that work is complete it will be important to identify what data sources are missing and need to be created. For example the new student ID card system has the vision to place terminals around campus that students can use these cards to inform the college of how they use services. A solid Information layer will provide the plumbing to collect and route that data. The Information layer will be founded on principals that allow for rapid growth and the introduction of new research and data technologies as they develop. This layer will inform the college and provide evidence for decision making that has never existed before. Evidence based decision making is the standard by which the 21st century colleges will operate.

**Interaction Layer**

The Infrastructure Layer and the Information Layer serve to build the footing that the Interaction Layer stands on. Without a sound footing nothing the college builds will be sustained. The Interaction Layer is just as it sounds, the layer that end users will use to interact with every service offered. The future of end user computing is about applications, what was a web site delivering relatively static information is now an application that not only delivers relevant information but it interacts with the user to present services that enables their success. This is just one of the many examples of recent technology and media tools that have evolved to application status. In order to enable the college to make this transition, Information Resources has developed a team of experts who have developed a process to address the needs of the college’s application and data integrations services. This team will use iterative practices that deliver an end user experience designed for achieving student success. This represents a shift from application and web development services to an end user experience focus.

There is an incredible back log of requests for services and tools at Bellevue College. IR will utilize all available resources both internally and externally to prioritize and integrate those services on the footings of the foundation described above. Priorities will be based on the contribution of that service to student success and other components of the colleges’ mission. Over the course of the next
two years this plan will eliminate the list of the long overdue needs of the college. Most important of these priorities will be the commitment to establishing a culture of evidence. Information Resources has a deep understanding of the need to connect the data dots and compile this information in a manner that enables data to be consumed and applied to the decisions that lead to fulfillment of the college mission.

The Interaction Layer will take an agnostic approach to operating systems and devices. The buzz about “bring your own device” (BYOD) for IR is a desire to focus on the delivery of the end user experience. IR embraces an approach that will center its attention on the needs of students and the tools that faculty need to deliver their instruction in whatever mode they deem appropriate. Simply put, it is about the consumer of information not the systems that presents it. The bright shiny object of technology needs to move to the background of infrastructure, in order to build resilient platforms that allow the college to focus on its mission of not having to reboot. In other words students complete their goals.
Conclusions

Bellevue College is committed to excellence and this strategy is a demonstration of that commitment. The staff that work within IR have an average tenure of nine years, which is simply unprecedented in the technology industry. That alone can demonstrate the commitment to the mission of Bellevue College but this strategy will strive to do more. Turning the focus from policing access to enabling access and ensure a rich user experience as a result. IR has a passion to serve students but also embrace the concept of being leaders. IR will explore, implement and deliver the best in information services. Then share and lead the way within the state for other colleges and extend that hand to the nation in the spirit of revitalizing the dream of education in the United States. No dream can be too lofty, no goal can be too high, for if we do not strive to be the very best, we have left some potential to be wasted.

There are many details and tasks that have yet to be realized and incorporated into a work plan, and to be clear, this is not intended to be a work plan, it is intended to be the vision that drives Information Resources over the next two years in pursuit of excellence. We embrace the opportunity of change, we embrace the opportunity to be a leader in the world and we embrace the opportunity to enable our students to experience the wonder of enriching their minds and souls through their educational opportunities at Bellevue College.