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Measuring Innovation: A Comprehensive Audit

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Abstract: The purpose of this audit is to evaluate the innovative capabilities of an information technology department at a higher education institution. This audit is based on theory, industry standards, and external research sources compared against the current practices of the institution. In the framework of the audit and as with any other audit, a question is posed pertaining to innovative capability and a standard or point of comparison is stated. At this point in the audit, evaluator(s) should note what evidence the institution is or is not showing for the demonstration of this standard. In this audit, the audit on Bridgewater State College is presented. The results from the audit of Bridgewater State College is included to give the student guidelines on what types of evidence should be exhibited. However, this by no means should limit the breadth of the analysis on any particular institution or criteria. At the conclusion of the audit, suggestions for improvement and recommendations can be presented. All evaluation/feedback should be objective as this is an audit. (Bridgewater State College is a medium-sized public college in Southeastern Massachusetts, USA. The college serves approximately 10,000 full and part-time students.)

Keywords: audit, innovation, evaluate, teaching and technology, public sector evaluation, standards, certification

Measuring Innovation: A Comprehensive Audit

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Abstract

A comprehensive audit was conducted by a graduate student at Bridgewater State College to evaluate innovative capabilities of an information technology department. The audit provides important information for the institution being evaluated and gives the college or university an opportunity to hear feedback from a student group instead of a traditional auditing entity.

Keywords: audit, innovation, evaluate, teaching and technology, public sector evaluation, standards, certification

1. INTRODUCTION

The purpose of this audit is to evaluate the innovative capabilities of an information technology department at a higher education institution.

This audit is based on theory, industry standards, and external research sources compared against the current practices of the institution.

In the framework of the audit and as with any other audit, a question is posed pertaining to innovative capability and a standard or point of comparison is stated. At this point in the audit, evaluator(s) should note what evidence the institution is or is not showing for the demonstration of this standard. In this audit, the audit on Bridgewater State College is presented. The results from the audit of Bridgewater State College is included to give the student guidelines on what types of evidence should be exhibited. However, this by no means should limit the breadth of the analysis on any particular institution or criteria. At the conclusion of the audit, suggestions for improvement and recommendations can be presented. All evaluation/feedback should be objective as this is an audit. (Bridgewater State College is a medium-sized public college in Southeastern Massachusetts, USA. The college serves approximately 10,000 full and part-time students.)

While this audit is focused on innovative capabilities in public higher education sector, the audit framework can be applied to almost any higher education institution that is looking to be innovative in their use of information technology in teaching and learning.

From this audit, the evaluator and the institution will learn:
- How the opportunity for innovation is evaluated
- How innovation is enacted and implemented
- The importance of feedback and assessment post-deployment.
- Innovation is not static, but dynamic and cyclical, and takes high levels of management skill and planning.

The audit is structured into six sections, which include:
- Use of Resources
- Innovative Strategy
- Innovative Culture/Corporate Culture
- Support, Longevity & Feedback
- Management Support
- The Future

2. USE OF RESOURCES

Analysis 1
Does the institution effectively allocate human resources to research innovative opportunity?

It is important for an innovative institution to develop and apply their available human resources in an effective and balanced manner. This would be demonstrated by not allocating critical human resources to numerous projects, and not assigning too many projects to one employee. This will ensure that a project is completed with accuracy and quality.

There is evidence from numerous successful projects that demonstrates that Bridgewater State College utilizes their human resources effectively.

Bridgewater State College IT staff is spread between projects in different ways. Some staff members are assigned to numerous special projects, along with their regular work, while some staff members are not necessarily involved with these projects.

Significant progress has been made by teams that are assigned to special projects (Banner 2000, Online Course Registration, Online Housing Lottery).

Analysis 2

What tools does the institution use to forecast the need for innovative action?

The integration of technology and strategy is important in any high-tech industry. In order to remain innovative, a firm should use forecasting tools to identify opportunities and trends in technology, and where these trends can be applied in their business.

It is evident that Bridgewater State College uses forecasting to discover the need for technological innovation. Bridgewater State College uses trend analysis and surveys from sources listed below to identify opportunities for technological innovation.

- *Peer benchmarking and analysis*
- *Site visits to best-of-class institutions*
- *Educause Core Data Survey Results*
- *Consultant analysis*
- *Research from other sources (Gartner Group, Giga Consultants, etc.)*

The Chief Information Officer also feels that there is strong communication between the members of the Board of Trustees and the IT division. Through strong communication, the IT division feels the Board and the CIO are proficient in identifying other areas for innovation and improvement.

Analysis 3

What percentage of the budget in information technology is dedicated to new initiatives?

Educause (a not for profit organization that promotes the use of information technology in higher education) studies conclude that, "Institutions must regularly allocate between 2% and 4% of education and general budget toward technology acquisition, implementation, and support to make significant progress toward infusing technology throughout the institution."

Bridgewater State College shows evidence that the institution is in a growth stage. Bridgewater State College has been known to spend from 6% to 8% of its total allocated budget on technological initiatives. During

growth times, Bridgewater State College could spend as much as 10% on technology. These percentages show superior investment in technology over other similar institutions.

Analysis 4

Does the institution pursue potential funding sources for information technology in similar ways as schools within the same class?

Typical funding sources (cited by Educause) for higher education institutions include, but are not limited to:

- Central funding from institutional operating and capital budgets.
- Debt financing/bonds.
- Special student technology fees/tuition add-ons.
- Revenue generating activities/Charging for services.
- For profit subsidiaries/auxiliary funds.
- Revolving funds.
- New monies (private donations, federal/state grants, IT fundraising.)
- Vendor arrangements.

Bridgewater State College clearly demonstrates exercising many of the above financial sources. Some examples of these are:

- *Central funding from capital budgets.*
- *Student technology fee/tuition add-on (approx. $160 yearly/student).*
- *Charging for services (printing, etc.)*
- *New monies. A majority of external funding is provided by grants.*
- *Vendor arrangements (i.e. discounts for laptop purchases).*

Analysis 5

Does the institution demonstrate a history of being innovative? Do the core competencies of the institution include information technology as a main driver?

One vital aspect of innovation is the ability for the institution to successfully integrate a technology strategy that will serve as the foundation for the overall business strategy of the organization. The enactment of technological competencies and capabilities, technology strategy, and experience provide a valuable framework for the competitive strategy of the institution.

With an impressive list of technological accomplishments, Bridgewater State College has demonstrated innovation and the use of IT in its main driving strategies. Such accomplishments include the installation of a wireless infrastructure, the planning and ongoing rollout of Banner 2000, the construction of the John Joseph Moakley Center, the continued development of online course technology, and distance learning.

Analysis 6
Does the institution have a strategy/position in its level of technology leadership? In other words, how does the institution decide to either be a leader in a certain technological area, or act later in certain situations?

It is important for an innovative firm to develop a strategic position that will aid in decisions to be a technological leader or follower.

Bridgewater State College has demonstrated that it uses a combination of leadership and follower strategies when enacting technology strategy. It is important for Bridgewater State College not to overbuild and to utilize what it purchases. At times, Bridgewater State College is a first mover (i.e. wireless infrastructure project), but at other times Bridgewater State College will wait for the cost of a technology to drop and the quality of a product to improve before acting. It has been cited in theory that the combination of these two methods is typical of an innovative firm.

Analysis 7
Does the institution actively use its knowledge and administrative capabilities to obtain funding for innovative it projects, as well as making that funding available for other areas of the school for it ventures?

The institution's technology strategy should be supported by the overall goals and mission of the College. Innovative technology projects should align with other institutional priorities and disseminate technology needs to users throughout the organization. Appropriate financial resources should be available to address these technology needs.

A portion of the technology budget is made available for projects that other members of the campus community can benefit from. For example, the chemistry department received funding for the integration of information technology with laboratory equipment.

Over 90% of College technology funding is centralized in budgets under the responsibility of the Information Technology Division and is administered as specified through the College technology planning process. The remaining technology funding, less than 10% of the total, is expended both in the Information Technology Division and in other divisional and departmental budgets, directed toward immediate needs not represented or identified in the planning process.

Analysis 8
Is there a policy for determining the feasibility of a venture and how easily is funding accessible? Does the institution perform cost-benefit analysis before making decisions?

Technical and financial feasibility should be assessed before undertaking a proposed project. The technical capabilities and competencies of the IT staff and the ability for the institution to raise the necessary capital need to be considered. Also, it is necessary for the institution to prioritize its objectives based on its costs and related benefits.

Bridgewater State College uses a number of different qualitative and quantitative methods to determine the cost benefit and return on investment for projects. (i.e. Bridgewater State College used qualitative assessments through surveys and interviews for the Courseware Development Center project.)

By developing accurate cost models and quantitative statistical analysis, Bridgewater State College can determine if its projects are providing an effective return on investment.

Analysis 9
Does the institution reserve backup resources for unplanned activities?

As part of the institution's short-term and long-term technology strategy, a small percentage of its capital resources should be dedicated toward a "backup resources" fund. This will allow the institution to maintain technical stability during times of high demand, infrastructure modification, technology innovations, and other uncertainties.

Bridgewater State College's unplanned activities represent approximately 8% of the total technology budget. These funds allow Bridgewater State College to respond to many technological changes that might affect the institution's current strategy. For example, planning activities such as the equipment replacement reserve fund allows Bridgewater State College the flexibility to utilize their backup resources to meet the demands of any unforeseen technological changes.

3. INNOVATIVE STRATEGY

Analysis 10
Does the institution respond to the actions of other institutions when applicable? Does the institution also respond to the competitive environment of information technology in higher education?

It is important for innovative institutions to find effective strategies to compete with other schools within the higher-education industry. Integrating technology and strategy should be a dynamic process.
Bridgewater State College responds to other institutions by continuously benchmarking against other higher education institutions in order to achieve best practices. Bridgewater State College is a member of Educause, which is a nonprofit association whose mission is to advance higher education by promoting the intelligent use of information technology. Educause helps those who lead, manage, and use information resources to

shape strategic decisions at every level. As a member, Bridgewater State College has access to other institution's data, which they use for benchmarking.

In addition, Bridgewater State College also analyzes other service industries such as health care and food and grocery services. It also responds to survey studies and trend analysis done by special consultants in Information Technology including Gartner Group, Meta Consultants, and Giga Consultants.

Analysis 11
Does the information technology strategy drive the main strategic goals of the organization?

Research suggests that technological change is one of the most important forces affecting a firm's competitive position and that firms find it difficult to respond to such changes.

In 1997, technology units at Bridgewater State College were restructured to create a more efficient organization. The new division coined, "Information Technology", consisted of four departments headed by a Chief Information Officer (CIO). This position was created to ensure that technology planning is part of the main strategic goals of the college.

Implementation - starting with the Class of 2008, Bridgewater State College will require all first year students to purchase a notebook computer. This requirement applies to all full-time students entering in or after Fall 2004. The intent of this requirement is to enhance student's overall college experience and to help students develop technology skills for their lives after graduation. It is also believed that this will enable faculty to incorporate technology in their teaching in many new ways. A message board has been set up for all Bridgewater State College Faculty to discuss any issues related to the College's notebook computer requirement, as well as share ideas about utilizing notebooks in the classroom. Students will need a Blackboard user account in order to access the Notebook *Discussion* Board.

Analysis 12
Does the institution's executives work collaboratively to make information technology a driving force of the college's mission statement?

The enactment of innovative behavior requires the support and involvement of senior management.

Bridgewater State College executives work well together and make IT a driving force of the college's mission statement. Bridgewater State College is effective at recognizing when to act and how to deal with outside forces.

To keep the campus informed about technology planning

as it is happening, Bridgewater State College developed a comprehensive web site at http://it.bridgew.edu/CIO/ where the campus community can review plans and committee discussions and offer suggestions.

Analysis 13
Does the institution identify where information technology can be of importance in other areas of the institution, where it would not normally have established precedence?

Strategic alignment of business units is sometimes necessary to implement strategic goals in an innovative firm. These efforts can result in numerous quantitative as well as qualitative benefits. Incorporating information technology in departments that would not normally see IT as an important part of their existence is a key factor in being innovative with technology.

Bridgewater State College's statement of priorities is "to use the college's extensive technological resources to become a regional center for technological innovation in teaching, learning and distance learning. This is done through the College planning groups. These groups meet with campus departments and constituencies at regular intervals to discuss their needs and ideas. In addition, Information Technology staff must constantly scan the horizon for existing "best practices" and emerging technology, and share these technologies with planning groups. As appropriate technologies are identified, technology staff should bring to the attention of the planning groups any technical issues (data security, application portability, and system standards) or on-going support issues which should be addressed as part of implementation of the new technology.

Bridgewater State College's current administration systems represent an excellent implementation of current generation, integrated College systems. These systems together provide support for the effective operations of nearly every administrative office and division on campus, including functions such as budget monitoring, purchasing, student accounts, admissions, student records and registration, alumni and development, human resources, property control, and auxiliaries. To simplify access to student and administrative data for students, faculty, and staff, the College had introduced an SCT-based solution called Infobear. Infobear allows students to register, drop or add a course, check their transcript, find out about financial aid, and even check their grades – all from a simple web interface.

4. INNOVATIVE CULTURE/ CORPORATE CULTURE

Analysis 14
Does the institution use the appropriate business structure to foster entrepreneurial thought?

An innovative high-tech firm has a flatter organizational

structure, which lends itself to more hands on management approaches as well as multi-responsibility job positions. An organizational structure that encourages its subordinates to work as a team, lends itself to entrepreneurial activity. (Keep in mind that it may be easier for this type of behavior to be fostered in a private institution versus a public institution.)

The IT department at Bridgewater State College tends to follow a matrix structure. Each functional area of IT has a departmental leader, (i.e. webmaster, helpdesk manager, etc), and a "team" setup to accomplish tasks together, or in small groups. The strong relationships between middle management and subordinate staff at Bridgewater State College foster innovative activities.

When employees were asked if they felt empowered at work, many responded that they felt they had a broad variety of responsibilities and felt challenged in the workplace. Again, with strong bonds between staff and middle management, in addition to a hands-on management approach, departmental and individual entrepreneurial behavior is fostered.

Analysis 15
Is communication a key player at the institution and is there evidence that it is effective?

At times members of different functional areas can feel a sense of distance from each other and have an incomplete understanding of the organization's goals. Thus, it is important to foster a strong line of communication and cohesion. A strong understanding of where the firm is going and why, will better facilitate strides toward the common goals.

There is evidence that Bridgewater State College takes communication very seriously. Bridgewater State College was analyzed in two ways: intradepartmental communication and interdepartmental communication.

Intradepartmental: It was apparent after speaking with some staff and with upper management that intradepartmental communication was very good between certain areas, and in need of improvement in other areas. We found that the CIS and other systems divisions communicated very well with each other and were in tune with the institution's goals and strategies. However, it was found that departments geographically separated from the rest of the IT division, such as those located at the Moakley Center did not feel as well informed. This was more so the case with student workers than staff. While it is difficult to foster perfect communication in departments with high employee turnover, it can be helped through e-mail communications, more frequent staff meetings, and "rally" type meetings where middle management meet with staff and students to speak briefly about the current divisional goals or departmental goals.

Interdepartmental: When 10 non-IT staff members from various departments and job functions were asked how in tune they feel with the IT department at the school, a majority (8 out of 10) felt that they were encouraged in one way or another to use technology here on campus, and share "best practices" with each other. They also felt that the IT division was very good at providing quality computers and equipment and adequate service when needed. Staff members also commented, when asked, that they felt that they understood what direction the IT department was trying to go in, and felt that they were a part of this direction. Here were some quotes from staff members:

"The technology here is great. It really is good to work at a school where the technology is there and it works and I can use it in my classroom."

"I can tell the tech department is trying to move toward a more technological learning environment, and I think students need to learn this because it is really what they will be dealing with in the real world."

Analysis 16
Does the institution foster, encourage, and reward innovative thought? Does it allow for failure and experimentation?

An entrepreneurial culture is that which is made of small divisions, a variety of funding channels, tolerance of failure and the opportunity to pursue outside projects.

The IT department at Bridgewater State College has small divisions. Employees in these divisions work together, eat lunch together, and have formed relationships with each other. This fosters a more comfortable work environment, than that which is separated by many states, or even countries.

IT staff also have a variety of funding sources to draw on such as those funds given by the school's budget, special project money that is set aside for last minute unexpected projects, grants that can be obtained, as well as other government monies that can be used to fund projects.

While the tolerance of failure could not be measured, upper management has a very interesting approach toward mistakes and failures. Bridgewater State College as an institution, recognizes its mistakes, collects feedback on how to improve, and acts, instead of settles for what is currently implemented.

Employees within the IT division are also allowed to pursue outside projects with other institutional departments. Many times, certain employees act as liaisons for other non-IT departments and see that these departments meet their IT goals. This is especially true with the process of rolling out the Banner 2000 system campus-wide.

In general, Bridgewater State College fosters innovative thought and encourages its employees to act on ideas. New ways of doing things and fresh insight are always welcome in the environment and key decisions can be made by middle management and staff (i.e. the people who recognize problems first), rather than by upper management. This strongly encourages a sense of responsibility and will make employees want to improve.

Analysis 17
Is there evidence that the institution creates a constant motion of human resources between different functional areas in order to foster innovation?

The key to success for a high-tech firm is not simply periodic renewal. There must also be cooperation in the translation of new ideas into new products and processes. In the higher education field, schools that allow their IT division to work together to accomplish a task, have found that projects are, overall, of a better quality and are instituted more smoothly. Some ways of ensuring good teamwork and a good work environment is to implement good communication, job rotation, integration of roles and long-term employment.

The effectiveness of communication was analyzed in Analysis 15.

The staff of the IT department demonstrates a stable work environment. Staff feels that they are encouraged to participate in projects cross-divisionally and feel that working together as a team gets much more accomplished than individual efforts. Staff also feels that the boundaries of their work are always expanding. This is an important factor in job rotation. It can help ensure that one does not grow tired of his/her job.

Staff is given the opportunity to integrate their roles with other members of the department and of the institution. Employees learn from each other but also have a chance to obtain formal intensive training by attending workshops and off-campus conferences. This environment fosters long-term employment and motivation to remain on the job longer, because they know they will be challenged and their knowledge will be expanded.

Analysis 18
Does the institution foster a culture of "continuous improvement", a well known philosophy of W. Edwards Deming?

Continuous change and improvement is key in any innovative firm. The difference in knowing when to rebuild versus when to rework is important. An innovative firm must gather feedback and constantly work to improve current practices in a cyclical manner.

Bridgewater State College has a strong management team that is efficient at recognizing areas for change in the organization. Senior management feels that the

Board of Trustees and the IT division work well together in identifying areas for improvement in the institution as far as information technology, and how better to make IT a driving force in the college's goals. This is also true with middle management.

Examples cited were the realization that an outdated residence hall network had to be reworked, as well as the upgrading of the student information system to the Banner 2000 software package. These examples and more show that the department and the school realize areas for improvement and innovation. A statement quoted from the Chief Information Officer, "Where I see a line, I know something can be done." referring to lines that used to stretch outside the registrar's office before online registration was implemented, shows the impressive amount of Deming behavior in the firm.

A final note on improvement was cited with the use of an annual survey that is distributed to all members of the campus community. This survey gathers feedback about the effectiveness of IT at Bridgewater State College. This feedback is then processed, and is turned into action.

Analysis 19
Is there evidence that the innovative behaviors of the information technology department are imparted to other areas of the institution?

In order for a firm to be innovative, all parts must be innovative. For example a firm with an innovative marketing division and a lack-luster sales team will be less likely to succeed. In high tech firms an innovative IT division also fosters this entrepreneurial culture throughout the institution. In the case of higher education, this would have to be demonstrated by the motivation of non-IT departments to utilize technology.
This concept of outward innovation was demonstrated in two ways.

Teacher Technology Center: This center set up in the Moakley Center was developed to allow teachers to share best technology practices with each other in a common location. This center was also designed for teachers to experiment with different software titles and hardware. Funds are given to this center just for these reasons. While staff of this center felt it was underutilized for the past few years, they are currently working on ways to get more faculty and staff to use the facility. If used regularly by different members of the teaching community, this center could definitely be a great way for the IT department to share their goals with teachers and vice versa.

Allowances for Faculty: The second method that shows the sharing of innovative technology thought throughout the campus was through conversations with three different department chairpersons. Chairpersons were asked if they felt they were included in the technological area

at Bridgewater State College and if they felt empowered to try their own ideas.

During all three conversations, staff reported that they felt that they had improved their department by using technology. One professor had a great idea for a technological innovation in one of his department's laboratories, and after conversations with the IT department, was given the okay to order equipment and try out new ideas. This excitement to try new ideas that use technology to improve teaching and learning is an innovative behavior of Bridgewater State College. Awarding each educational department funds just for technological innovation could foster further innovation. This would ideally be applicable in a better economy.

5. SUPPORT, LONGEVITY, AND FEEDBACK

Analysis 20

Are the longevity and the implications of implementing new technology closely analyzed? How is the aspect of timing used in evaluating an opportunity for innovation?

In order to meet expectations of those using the new technology, it is important to maintain and support existing products and services.

It is also necessary to be able to look at failures through past enactment and realize why those approaches were not successful.

In 1995 Bridgewater State College was given the opportunity to wire the residence halls. The problem was that the school was not yet prepared for this new technology. It was then considered a wasted form of resources. The school now is a wireless network campus with over 2000 students in the residence halls connected to the Internet and hundreds more using the college's wireless network.

"Our faculty [is] using these new tools in truly innovative ways and students in the sections are reacting very positively to the changes." – Bill Davis, CIO.

Analysis 21

Does the institution provide end-user support actively and knowledgably post deployment?

Direct measurements of progress toward meeting the goals and objectives set must be made. Institutions should survey their community to evaluate the performance of set objectives.

Support for the change initiative must be provided, as well as the reinforcement of the importance of the change initiative. Also, once the technology is deployed, technical support is a key ingredient to success.

Faculty and staff feel positive that Bridgewater State College has a very capable department for providing technical support for information technology, although

there seems to be some concern regarding the extent of communication. "There is a shortage of people who understand both the users' needs and the technology." "Communication as a whole is pretty good, but there is always room for improvement."

Some users were concerned with the level of training that the technical support staff receives. They felt that the staff that supports an entire college community should have an extensive background in information technology and customer service.

Analysis 22

Does the institution offer opportunities for staff, faculty, students, and other community members to provide feedback for improvement upon the information technology strategy? Does the institution respond to this feedback?

The institution should recognize and encourage collaboration among its community. Key constituents must recognize the necessity for action before they willingly participate.

In order for an institution to remain innovative it is important to involve the community and respond to their concerns and ideas for new technology.

There is a web site that has been developed so that the campus community can review plans and committee discussions and offer suggestions.

Bridgewater State College also provides other opportunities to include campus input and involvement. An example would be the annual technology satisfaction survey distributed to the community.

Bridgewater State College's mission includes a responsibility for advancing the economic, social and cultural development of the region's population to the benefit of those who live and work in the region. Several services and outreach centers have been established to assist in this mission: The Institute for Regional Development; The Curriculum Leadership Center: The Children's Physical Development Clinic: The Mathematic, Science and Technology Education Center; The Institute for Technology Management; and the Support Services for K-12 Education.

The Town and College established a Community Relations Committee to improve communication by providing a forum to discuss issues of mutual concern and projects of mutual benefit.

After receiving feedback, the Information Technology division investigates all suggestions and responds back to the community via a written report on how the feedback will be considered.

Analysis 23
What metrics does the institution use for measuring the success of an information technology deployment?

It is valuable to invest in studies that benchmark best practices among competitors, and that generates new concepts and frameworks.

Bridgewater State College administers an annual survey to staff, faculty, students and the community. The survey summarizes the prior year's activity and asks what could currently be done to improve the institution. These responses are evaluated and looked at to make changes.

Bridgewater State College participates in the Educause Core Data Survey. This is a benchmarking tool used to compare the institution with other schools within an institution's class.

Gartner Group also provides sources of trend research and analysis for Bridgewater State College.

Analysis 24
What is the institution doing to promote and advertise the use of its information technology?

In order to make progress in the process of incorporating technology, an institution must provide computer training, and development workshops.

Also, the development of marketing structures will better facilitate the use of new technologies. If the availability of the information technology is not exploited, the college community cannot use it effectively.

Bridgewater State College facilitates communication of innovative technology through the Teacher Technology Center (TTC). The center provides the resources and services to combine information and instructional technology to support and enhance the college's teaching and learning mission.

The TTC has matured to be very effective. Currently they are looking to hire someone to market ideas throughout the different divisions. Communication can sometimes be a weakness in making sure that everyone is aware of new practices. Bridgewater State College is aware of this weakness and is looking to strengthen the fault.

6. MANAGEMENT SUPPORT

Analysis 25
Is the theme of an information technology driven institution a priority of all executive board members and high level management?

The campus governance structure should include an IT policy and planning group with approval authority for

major new IT investments and responsibility for setting funding priorities. In addition, the IT leader can be most effective if he or she has a seat on the executive cabinet or council. This structure will facilitate the sharing of responsibility for IT-related institutional challenges and ensure that such challenges are placed on the agendas of senior campus leaders.

At Bridgewater State College, in addition to having two representatives on the Budget Advisory Committee, the IT department's approval for the purchase of equipment is required for every department. In fact, a review of all Information Technology equipment purchases is a key date specified in the budget calendar. The CIO, an executive leadership member, reports directly to the president. This, in addition to ensuring that technology planning is directly responsive to the college's mission, provides all executive leaders of the college equal stakeholders and partners in shaping technology for the institution.

Analysis 26
is information technology provided with an appropriate amount of funding by the college in order to exist in a growth path?

Institutions must regularly allocate between 2% and 4% of education and general (E&G) budget toward technology acquisition, implementation, and support to make significant progress toward infusing technology throughout the institution. In years when large technology projects are undertaken, the annual budget allocation may approach 6% or 8% of E&G.

Bridgewater State College has committed a large portion (nearly 10%) of its budget to support general technology-related issues and new investments in the last year. The IT department carries the responsibility to centralize over 90% of this funding to conduct specified processes. The remaining funding (approx 8%), is used for unplanned processes, by the IT department and other areas. This expenditure helps the college keep up with the rapidly changing technology environment. The centralization of budget ensures that the college technology resources are aligned with priorities identified through planning.

7. THE FUTURE

Analysis 27
How will the institution continue to demonstrate its innovative capabilities? Is there evidence of this intention?

Becoming innovative is not a one-time project or goal. Innovation is a constantly evolving process, which needs to be maintained, nurtured, and improved upon, in order to remain innovative.

Innovators behave differently, achieving competitive

superiority through their approaches to business in general and their use of information technology in particular, which does not necessarily occur by spending more but understanding the capabilities and taking the full advantage of it.

As stated by the CIO of Bridgewater State College, some of the missions and goals for 2003-2004 education year are:

- *Open new 'one stop' faculty support center for teaching and learning with technology.*
- *Prepare for implementation of student notebook computer requirement.*
- *Increase the availability of presentation technology in classrooms campus-wide.*
- *Complete implementation of human resources module of SCT Banner by December 2003 and implementation of student module by March 2004.*
- *Prepare for implementation of new student portal, content management, and reporting software.*
- *Improve integration of administrative systems with academic systems.*
- *Join Internet II and develop regional consortium to share expertise and cost.*

Also, in order to get feedback from stakeholders, the IT department plans to undertake the following:

- *Update Bridgewater State College IT policies and improve campus awareness of appropriate use of technology resources.*
- *Assess quality of IT services through online survey and discussion of results with IT planning groups, incorporate recommendations into operational planning.*
- *Expand visibility of Bridgewater State College in state, regional and national technology discussions through presentations and committee service by CIO, senior IT staff and faculty.*

8. CONCLUSION

The benefit of an audit to a higher education institution and its ability to provide quality IT services to its students is invaluable. Learning the auditing process and the method for conducting analytical studies is pertinent to any graduate student who wishes to market his or herself in the business arena. This tool can be used in any innovation of strategy course in a graduate level program as well as some Capstone courses as a final project. This tool also provides important information for the institution being evaluated and gives the college or university an opportunity to hear feedback from a student group instead of a traditional auditing entity.

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