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Information Technology Strategic Plan 2015-2020

IT Strategic Plan

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# Message of the CEO

It is my great pleasure to present the *Information Technology Strategic Plan for 2015-2016* for the Bluecloud Networks. The organization has long been recognized as a leading entity in the effective use of advanced technology to support its vision and mission of spreading Internet connectivity nationwide. The IT plan reconfirms our commitment in maintaining our leadership by consumerization of technology for the organization nationwide.

The IT Plan supports this organization which positions itself as a leading entity which also is renowned for its excellence in IT. Internal consumerization of IT also sets our goals for accessing company data on mobile devices. Our IT goals and strategies are also aligned with this vision of having one person; one computer. IT provides transformational change needed for the organization to achieve its goals and to face challenges of the various departmental requirements, as well as reap the potential rewards from this change. This IT plan also outlines our new initiatives based on the Discovery enriched network and data access availabilities, which also plays a crucial rule in these initiatives and acts as an enabler in the discovery & innovation process.

This plan would not have been possible without the vision of the BOD & the CEO in understanding the value technology, the dedication of the IT leadership team, other departmental staff that have shared their ideas and provided valuable feedback. As the CIO I sincerely welcome any input you might have on our technological needs & opportunities for the organization. The next few years will be very exciting times for the organization. Many challenges lie ahead, but the potential reward is also great. The BCN IT started its journey couple of months back and looking forward to supporting the organization in making our continued success a reality.

Shahab Al Yamin Chawdhury

Chief Executive Officer

# Executive summary

In November 2014, the company unveiled the IT initiatives & as a leading technology company, the organization moves forward to strengthen their internal IT infrastructure which will cater to the increase of its staff productivity. We have formed a “one person one computer” mobility and formulated everything we can to adapt to data mobility and as well as user mobility. The goal is to develop, manage & maintain a new breed of professionals to anticipate and respond to organizational and as well as departmental requirements, while catering to unique challenges presented by a fast-changing & knowledge driven global environment.

The IT team also launched a new theme called “Work Smart”. This initiative further strengthens the organizations focus on emphasis on discovery and innovation at all fronts of the organizations operations, reaching out to more than eight hundred office staff. IT of course plays a very vital role in this effort. A technology enriched environment got transformed into one that is more conductive discover & innovation.

To support the organization, we reviewed our current IT strategies and directions and formulated new strategies for the next three years in this new IT Plan document. This new IT plan outlines our vision of how information and communication technologies (ICT) can act as a change enabler to help the company transform and achieve its target strategic goals and facilitate technology adoption. This IT plan fully aligns with our future IT strategies and directions to the new IT strategic plan.

In preparing the IT plan, extensive consultation has been made with all the major stakeholders, including all the departments and administrative units. The plan was also presented and discussed with CxO’s presence and therefore agreed upon.

This plan identifies some key strategic goals to complement the organizational strategic goals:

* **Enable Transformational Change** — We believe, IT should be leveraged as a tool that will enable transformational change for the organization in achieving its new strategies and directions.
* **Provide Robust and Agile IT Infrastructure** — Our IT infrastructure is the backbone for all our ICT services; robustness and agility enables the organization to meet new demands and face changing needs.
* **Be Efficient and Cost Effective** — We understand that resources should be used wisely. That is why the IT organization has constantly explored new technologies that not only provide enhanced capabilities and productivity, but also cost savings to the organization.
* **Ensure IT Security** — Our IT systems contain valuable personal, knowledgebase, and research data. IT security is crucial and will be one of the main focuses in the coming years.
* **Enhance Transparency and Organizational Effectiveness** — Transparency in how ICT decisions are made and effectiveness of the IT organization in delivering quality ICT services are important aspects of our strategy.
* **Promote Policies, Governance and Standards** — ICT policies, governance and standards further strengthen transparency and enhance the quality of service we provide.

In addition to the Core Values identified in the Strategic Plan – Excellence, Honesty, Accountability, and Civility– the IT organization has identified 5 additional Core IT Values that our team highly respects:

* Professional knowledge and integrity
* Business alignment and user focus
* Result-oriented
* Service quality
* Proactive

The development of the IT Strategic Plan was guided by the same 5 principles as that of the organizations Strategic Plan:

1. Staff access in knowledgebase store to accelerate their career development
2. Excellence in learning and research, technological innovation and knowledge transfer
3. Benefit to the social and economic well-being of Bangladesh
4. Accountability in the use of public resources
5. Global outreach and international competitiveness

The new IT Strategic Plan is also aligned to the organizations 6 strategic areas:

1. IT Learning and Career Development
2. Research and Technology Transfer
3. Staff Recruitment, Reward and Retention
4. Organizational scale Planning & Development
5. Globalization
6. Branding, Image and Culture

# The Office of the CIO

The Office of the Chief Information Officer (OCIO) is responsible for the strategic development and co-ordination of all information services and technology initiatives in the organization. It is BCN’s aims to be a leading enterprise, in the use of advanced information and communication technologies (ICT). The company seeks to provide an environment within which ICT can become a natural and conducive support to all its activities. The strategic importance of technology for BCN is exemplified by the fact that the organization is the first in this region to have appointed a CIO.

The OCIO is headed by the Chief Information Officer, who reports directly to the CEO. Enterprise Solutions Office resides under the supervision of the CIO.

ESO is responsible for the provision and management of central ICT and information systems facilities at the HQ, remote offices; and for rendering technical support for those services and systems. ESO is organized into 5 teams:

1. **Field Services** — includes PC maintenance, video services, conference room support, desktop environment, public “Express Terminals,” etc.
2. **Network Services** — includes network infrastructure, wireless network, mobile connectivity, IP phone services, data network, etc.
3. **e-Services** — includes e-learning, intranet-portal, company website/domain, web environment, messaging, mobile services, etc.
4. **Data Center Services** — includes data center planning, management and monitoring, virtualization, cloud-computing, research/high-performance computing, etc.
5. **User Services** (Help -Desk) — includes service management, desktop software, account management, service desk, user training, etc.

ESO is primarily responsible for the development and maintenance of enterprise administrative systems, and the management of enterprise data. It consists of 3 functional teams:

1. **Enterprise Data and Information Services** — data standardization and management, ID management, Administrative Information Management System (AIMS) support, business continuity planning (BCP) on IT systems, information services, etc.
2. **System Development and Support** — development, interface, and support of a whole range of enterprise systems covering human resources (staff record, leave, personnel review, pay raise, outside practice, staff development, payroll in conjunction with the developer team), finance (Oracle Financials, budget management, inventory), and general (communication directory, committee, room and facilities booking).
3. **Database Administration and Application Infrastructure** — System database administration, development and support of application infrastructures such as payment gateway, email interfaces, single sign on (SSO) with domain services etc.

The OCIO also maintains the Executive Information System (MIS), an institutional data warehouse to facilitate organizational management in planning and decision making. The e-Learning Team is also part of the OCIO, and offers technical support on the blackboard learning management system (LMS) as well as other IT tools and applications for teaching and learning.

In addition to the OCIO organization, additional IT staff resides across various academic departments and administrative units. The IT staff within the OCIO organization work closely with the “extended” IT organization to collectively achieve the organizations strategic goals as well as the goals outlined in this IT Plan.

# Progress since Last IT Strategic Plan

The previous Information Services Strategic Plan 2010 – 2015 was formulated to align ICT initiatives to the Strategic Plan 2003 – 2008. In that plan, 4 key ICT areas were identified. The following highlights some of our past achievements in those 4 areas:

1. **Distribution Platform** — Although the organization acquired internet distribution licenses and began using a variety of tools, it was clear that a centrally-supported platform was crucial & gradually spread throughout the nation. Over the past 5 years, the platform has constantly been upgraded and expanded to support a rapid growing population of active users.
2. **Knowledge Management** — Collecting and providing access to knowledge created at the organization, in both electronic and print format, is another important service that we provide. Developers &Technical team launched the MIS, ERP, HR modules over the past years. It now captures, preserves and distributes
the organizations research outputs, chalk-talks and presentations, technical reports etc.
3. **Institutional Data Management** — BCN is one of the first enterprise that deployed & implemented a mission critical enterprise resource planning (ERP) system followed by Human Resources. As a result, we achieved a high level of data and applications integration for the three main constituencies of the organization: customer, staff, and outer world. With an integrated platform, different administrative offices now share a common set of data definitions, facilitating data flow and work flow to be defined.

A new identity management system was deployed in August 2015 to control enterprise data access by internal departments. This laid a foundation for further use of other technical services.

1. **Web and Portal Strategy** — With the growing importance of the Web as a major communication channel, we formulated two strategies – one for our external-facing public website and another for our internal portal. To the public, our website preserves and strengthens the branding and image. To the internal users, our intranet portal provides a personalized experience with easy access to information and e-services. A new and improved portal services is scheduled to be launched at the end of year 2015.

# Alignment with Current Strategic Plan

In formulating the new IT Strategic Plan 2015-2020, we took the opportunity to review our existing IT priorities and current alignment with BCN’s new Strategic Plan for 2015 to 2020. The following is a brief analysis of our existing IT activities and their alignment with the new goals and strategies according to the nominated strategic areas:

1. **Staff Learning and Career Development** — e-Learning has always been a crucial component in our IT strategy. BCN has been a visionary and a pioneer in the use of IT infrastructure in Bangladesh. Our previous IT Plan identified “A Unified e-Learning Platform” as one of its strategic areas, establishing the knowledgebase to be among the first in Bangladesh to implement a centralized learning management system (LMS). We have consistently upgraded and expanded the e-learning platform to enable a technologically advanced and pedagogically-rich environment supporting a diverse range of teaching and learning needs. We will continue to move aggressively as a leader in this area. In particular, we will address specific teaching/learning needs to support the new IT reform. The IT organization will continue to work with the Library in providing an effective learning environment around each establishment. We have been working with various administrative units, sales units in providing applications and systems to support internship, service learning, career preparation, and advising.
2. **Research and Technology Transfer** — The IT organization has been working with the other teams to support them in their research and technology transfer mission through various IT services and support. In addition, we have been working and will continue to work closely with various departments to serve their technology transfer needs.
3. **Staff Recruitment, Reward and Retention** — The IT organization has been working closely with the Human Resources Office (HRO) to identify areas where we can use IT to streamline their work or support new initiatives, such as the performance-based assessments. For budgeting support, the Executive Information System (EIS) maintained by the OCIO provides useful data that can support the annual budgeting process for training needs. We have also been working with the Finance Office (FO) in improving and upgrading their financial applications as well as streamlining operations and workflows.
4. **Planning and Development** — The Admin Office (AO) has always been our partner in helping user departments identify IT needs and procurement for new buildings and offices, both on premise and remote sites. The IT organization is of course closely involved with the IT planning, implementation and eventual support of any nationwide development projects.
5. **Globalization** — The IT organization has been working with various departments and administrative units, such as the Admin Office (AO) and the External Offices (EO) to provide IT services and support for local and nationwide staffers as well as enable global collaboration and communication services
6. **Branding, Image and Culture** — We have been very active in supporting our various branding initiatives through our Web strategy and collaboration with the marketing departments and other offices. The CIO is also the chairman of the Task Group for Corporate Identity that defines our corporate identity policies
and assists the President in enforcing them. For development, the IT organization has been working with the Admin Office (AO) to identify new applications to facilitate their work.

**Our Vision**
To be a global leader in the innovative use of IT in the local enterprise

**Our Passion**
Empowering BCN and its staffs to achieve its missions

**Our Mission**
Provide strategic technology leadership and deliver innovative IT solutions to advance the core missions of the organization and support the needs of the departments

**Our Mantra**
Empowering through innovation and adoption of IT facilitators

# Our core values

In addition to the Core Values outlined in BCN’s Strategic Plan, the IT organization also cherishes the following:

1. **Professionalism, Integrity and IT Competence** — What each and every individual within our extended IT organization value most, is the professionalism with which we approach each task, the integrity of our workforce in taking responsibility and being accountable for our actions, and our IT competency and professional knowledge. The IT organization constantly strives to be a learning organization to continuously transform ourselves to adapt to the ever changing technology needs of higher education and our stakeholders.
2. **Business Alignment and User Focus** — The IT organization also highly values our ability to constantly align what we do with BCN’s Strategic Plan. This is achieved by active involvement by our stakeholders in IT strategy formation and setting objective IT priorities. Our IT organizational culture strongly encourages communication and openness in decision making at all levels. As a service organization, what we do must be highly user-focused, providing true value and benefit to the general staffers as well as advancing organizational mission.
3. **Result-oriented** — Our IT organization is practical, resourceful and result-oriented. Technology will be used wisely to achieve measureable benefits for our users. In this aspect, we constantly seek innovative use of technology while balancing cost effectiveness in implementation. We never consider technology for technology’s sake.
4. **Service quality** — Besides providing technology vision, the IT organization is really a service organization, serving close to 800 staff from various departments, units and associated organizations. Hence, service quality and “customer” satisfaction is highly important and highly valued amongst our IT staff. All units within our IT organization keeps detailed record of all service calls and performs regular customer satisfaction surveys.
5. **Proactive** — We truly believe IT’s role in a technology driven organization is more strategic and transformational. We are no longer simple passive providers of IT services, but proactive participants in helping achieve BCN’s mission and strategy. In this regards, we highly value our ability to proactively seek new technology and application to streamline and enable business transformation.

# IT Strategic Goals

To realize the mission and vision of the organizations Strategic Plan — the IT organization has identified
6 key strategic ICT goals that will guide the IT direction for the next 5-year duration of this plan. These strategic goals represent the aspirations of our IT organization to help achieve its target vision of becoming a “leading enterprise”:

**Goal #1. Enable Transformational Change
Goal #2. Provide Robust and Agile IT Infrastructure
Goal #3. Be Efficient and Cost Effective
Goal #4. Ensure IT Security
Goal #5. Enhance Transparency and Organizational Effectiveness
Goal #6. Promote IT Policies, Governance and Standards**

Achieving these goals will bring about the following key areas of IT advancement for BCN in the coming years:

**Modernization** — This plan outlines several IT modernization efforts that will impact the quality of our IT services for the coming decade. The company is moving aggressively in creating a new data center and a digital research cyber infrastructure that will provide a modern infrastructure to support research and teaching as well as e-business needs.

**Innovation** — The organization relies on IT for all its core functions. This plan outlines bold new initiatives that will provide innovative technologies, applications and platforms to bring about transformational advancements in how the organization operates its business.

**Service** **Quality** — The IT organization is largely a service organization. In the coming years, we plan to implement standardized IT service management best practices to further strengthen our operations as well as to allow us to be benchmarked against international standards like ITIL.

**Sustainability** — Through modernization and innovative use of new technologies, the IT organization is a crucial player in the sustainability efforts in reducing the consumption of energy and our environmental footprint, by enrolling minimum servers with virtualization capabilities.

# Goal #1: Enable Transformational Change

“We believe IT should be leveraged as a tool that will enable transformational change for the organization in achieving its new strategies and directions.”

We plan to enhance our administrative systems with new technology, so that the organization could achieve transformational change in higher operational efficiency and evidence management capabilities. To facilitate changes in the organization operations, we plan to enhance and/or revamp affected enterprise systems so that BCN can, not only meet these challenges, but also leverage the opportunity to transform our enterprise processes to be more effective.

In the knowledgebase front, we plan to move aggressively in adopting new portal based technologies to support teaching and collaborative learning. For example, our knowledgebase platform will be enhanced with mobile-learning and social-learning capabilities. This technology-rich learning environment will be transformational in how we apply modern and innovative pedagogical methods and will enhance the competitiveness of our staff. Staff will have ample opportunities to equip themselves with modern IT skills that are essential for their future career in a knowledge-based society that depends greatly on technology.

Other functions in the organization can also benefit from IT’s transformational capabilities are our globalization efforts as well as branding, and industry collaborations.

**Strategy 1.1: Enhance administrative/enterprise systems for operational efficiency**

To empower administrative units to be able to quickly adapt to business or policy changes, new technology will be investigated, ranging from using business intelligence to analyze institutional data, modern workflow to streamline processes, to intelligent document management systems for a paperless office. For example, various paper forms processed by the Human Resources Office (HRO) and the Admin Office (AO) can be automated to streamline processes, reduce paperwork, and improve response time. As a way to improve our own efficiency, we plan to adopt international standardized IT service management best practices to manage our IT services.

**Strategy 1.2: Align enterprise systems to support the IT Reform**

With the IT reform, there are changes at many fronts. Firstly, we will need to plan for increased ICT demand from new staffers. We will need to reassess, upgrade and monitor the availability and capacities of our infrastructure, hardware, and software to support potentially a thousand more persons. In the coming years, we will modernize our data center as well as create a robust private cloud infrastructure, which will give us more agility in coping with the organizational growth.

Secondly, given the amount of changes in the structure to support the enterprise model, there will be associated changes in all administrative systems that touch upon our Staff Information/Identification System (SIS). We will take this opportunity to replace some of our old systems with newer technology, such as our Intranet-based Resource Management System (RMS) which has been traditionally maintained for over a decade and the Internet Program Management System (i-PMS) which provides program-level review of staff performances while leveraging the knowledgebase systems as well.

In addition, with increased number of staff, newer scheduling models and methods as well as optimization technologies will need to be investigated & deployed. With more flexible growth structure, additional applications will be needed to support HR, , Finance, Admin, Credit & Control etc. Additional IT systems and support will be needed to support the new approach. Regular and rigorous IT system health test will need to be performed to support more accurate capacity planning, especially for the most heavily loaded applications, such as our Management Information System, Enterprise Resource Planning applications and their associative tools.

**Strategy 1.3: Enhance competitiveness of our staffs**

The IT organization supports this strategic area in many ways through our various productivity training programs. For example, we will continue to offer a comprehensive set of highly-practical IT and office literacy and IT skills courses to prepare staff for a technology-oriented workplace. Some of these courses may lead to IT certifications for our employees.

We plan to continue to provide a technology-rich environment for staff learning, empowering them to be future technology-savvy knowledge workers. Our various computer loan/ownership schemes ensure staffs have the necessary hardware and software tools for learning.

To optimize staff’s employment opportunities, we will continue to work with the HR to further enhance our e-portfolio platform. We will also work with the Career and Internship Office (CAIO) of HR ensure staffs have timely and convenient access to employment information. In addition, we plan to enhance intern’s exposure to IT through broadening of part time opportunities within the IT organization.

**Strategy 1.4: Facilitate globalization**

The “Globalization” strategy calls for expanding the organization’s global outreach and visibility as well as promoting the diversity of staff and interns to support intellectual enrichment and operational excellence. In this regards, the IT organization will continue to improve our online presence through regular review of our Web strategy, online branding, and content management (DMS/CMS).

To support our increasing number of staffs, we plan to enhance our identity and access management system so that these new comers could easily be accommodated into our system and immediately benefit from our intranet tools and content.

We will also strengthen our social networking capabilities and enhance our use of various social media to further support our globalization efforts, allowing us to conveniently collaborate with research collaborators anywhere in the world. We will continue to explore newer video conferencing and streaming technologies to facilitate global communication for research collaboration and staff learning opportunities.

**Strategy 1.5: Enhance branding**

Another strategic area for the organization is “Branding, Image and Culture.” The IT organization will be involved with this effort in many ways. Firstly, we already have set up a taskforce to focus on our long-term Web strategy. The taskforce will regularly review our website and initiate redesign efforts if needed to maximize our online presence and branding consistency. Any online branding-related work will be done in collaboration
with our Communications and Public Relations Office (CPRO) now led by CMO’s team, as part of a unified organization-wide branding strategy. Since the company name and logo is widely used on the Web, the CIO is also involved with polices for corporate identity.

Secondly, we will work with the HR Office (HRO) in enhancing IT support for development and improve relations in support for the organization’s long-term development strategy for generating sustained support and major donations to pursue a culture of excellence. For this, we plan to acquire a suitable customer-relationship management system specially catered to the needs of effective human engagement in all aspect of company image.

**Strategy 1.6: Enhance collaboration**

The IT organization promotes a culture of sharing and collaboration among central IT staff as well as with IT or Technical Staff in various departments and units. This extended IT family is connected through our joint forums, workshops, and other activities. We will further adopt and promote the use of social media for IT sharing within the extended IT organization.

We also work with other administrative units/departments through our pool of Departmental Network Administrators (DNA), who acts as our single point-of-contact (SPOC) for any IT-related issues.

# Goal #2: Provide Robust and Agile IT Infrastructure

**“Our IT infrastructure is the backbone for all our ICT services; robustness and agility enables the organization to meet demanding and changing needs.”**

Ensuring the reliability, availability and serviceability of our heavily utilized IT infrastructure is a topmost priority. Our data center is now over a decade old and is already at its maximum capacity. In the coming years, we will revamp and modernize our data center facilities taking advantage of newer and more efficient technologies. This modernization will also allow us to strengthen our support for remote sites. At the same time, BCN - IT is designing our next generation cyber infrastructure that will adopt new technologies and leverage high performance computing for research support. In addition, we plan to move aggressively in a sustainable model for disaster recovery and business continuity.

**Strategy 2.1: Enhance reliability, availability and serviceability**

With the organizations globalization strategy and our various collaboration portal deployment, coupled with the staffs increasing demand for ubiquitous access to our IT assets, highly reliable and 24x7 availability of our IT services is crucial. Central IT must provide mission critical services with verifiable assurances that there is no reduction in reliability, availability, serviceability and performance at all times.

We will need to ensure that the design of our IT infrastructure will meet the demands for the next decade to come. For example, we plan to establish a sustainable hybrid cloud service model with proper equipment life-cycle management. We will proactively monitor the state of all IT services for capacity planning and make any necessary improvements to service provision.

**Strategy 2.2: Strengthen support for remote sites**

Currently, the IT organization supports all twenty-one remote sites. Currently, we are only capable of providing basic support to these sites. Moving forward, we plan to strengthen and extend our support by establishing a common set of standardized network services and their corresponding service levels so that staff and interns at remote offices can enjoy comparable, if not the same, quality of services. In order to achieve this, we will need to employ newer technology to extend network services seamlessly to remote locations as well as allow us to monitor and manage IT infrastructure remotely by managing all access networks in the near future, leaving the distribution network be managed by the network operation center. In addition, we plan to outsource on-site support to local service providers whenever cost-effective to do so. We will ensure adequate trainings be provided to local support staff.

**Strategy 2.3: Expand and modernize data center to support growth**

Our data center is close to capacity and has been in use for over a decade. It needs to be expanded and modernized in order to support our ever growing IT needs. Steps have been made to begin this work. However, the total effort may take several years to a decade to complete. During the transitional years, we will need to operate two world-class data centers in parallel. The new data center will be designed to host our next generation IT infrastructure for the coming decades. Working with the Admin Office (AO), we will ensure that all new buildings are capable of accommodating these next generation IT facilities and services. Together with the Finance Office (FO), we will establish a life-cycle funding model to continuously maintain the two world-class data centers for the coming years. With a modern data center, we will be able to initiate more aggressive green IT programs. With new data center equipment, we will have tools to allow us to monitor and have better control over power consumption. With the new data center, we will be in a better position to provide on-demand utility computing using virtualization and cloud computing technology to further improve performance and efficiency to each BCN establishment.

**Strategy 2.4: Proactively adopt new technologies**

The company has always been a leading innovator in the use of IT to support its mission. Technology is always a crucial component of our strategy. We will continue to maintain a leadership role, but will also ensure that the IT investments are well aligned with the Company Strategic Plan and budget constraints. To do so, IT management will maintain a constant dialogue with the management and various stakeholders.

Through our knowledgebase support group and our collaboration with various departments, we will work together to define our next generation e-learning strategy and technology platform to better equip our staff.

Through our IT governance structure, we will ensure any new technology or service adoption (ISO/IEC:27001, ISO/IEC:20000) will be made with thorough benefits, risks, and trade-off analysis as well as sufficient and seamless IT support and proper funding and resources to sustain long-term deployment.

**Strategy 2.5: Support and leverage high performance computing**

In line with BCN’s effort in creating an enterprise grade infrastructure, we will map out a new high performance computing (HPC) strategy to support our various departmental needs. We will take this opportunity to explore new innovative options, such as leveraging grid and/or cloud computing technologies. We will explore how advanced computer virtualization technology created on enterprise for massive data, can be further leverage for research/storing use across different disciplines. To support this effort, we plan to participate in regional, national and international HPC groups as well as high-speed research and education network groups to facilitate
global collaboration.

**Strategy 2.6: Sustain disaster recovery and business continuity readiness**

The ability to deal with disasters, risk management and short-term displacements is crucial to sustaining
operations for the organization. Moving forward, we plan to have a well-defined disaster recovery (DR) process and DR site/equipment as well as well-tested business continuity (BC) plans in place for all critical systems, in terms of business risks and/or impact of failure.

Furthermore, we plan to establish rigid systems development, maintenance, and operational standards for these critical systems. Sufficient redundancy will also be provided for these systems. We will also provide a resilient and sustainable IT infrastructure to ensure a workable DR/BC plan at the network and system level for each mission critical service. All DR/BC plans of critical services will be drilled regularly and be reviewed whenever there is any major change.

# Goal #3: Be Efficient and Cost Effective

**“We understand that resources should be used wisely. That is why the IT organization has constantly explored new technologies that not only provide enhance capabilities but also cost savings to the organization for longer terms.”**

We have been exploring modern unified communication (UC) infrastructure to modernize and simplify communication across different platforms and media. We are aggressively adopting virtualization technologies and building up our cloud computing capabilities with minimum hardware installations and the moto “1 person 1 computer.” To further save costs, we plan to leverage open source tools/platforms and/or cost-effective outsourcing whenever possible. As a responsible citizen of this planet, we will continue to adopt and promote green IT, reducing our part of the carbon footprint, which is not only good for the world but also saves money. In addition, we plan to improve effectiveness of the overall IT organization by facilitating IT knowledge and technology sharing among all IT teams in the organization.

**Strategy 3.1: Unified communication infrastructure**

In the coming years, we will continue our unified communication (UC) strategy of integrating communications and computing resources and services, allowing resources to be shared and at the same time greatly improving our communications capabilities including PSTN integrations. UC will enable various messaging contents (data, voice, video, image, SMS, fax, etc.) to be easily and seamlessly accessible across different devices (desktop/mobile), platforms (Windows, Unix, Apple, etc.) and applications. For example, our future adoption of the Microsoft Exchange Server platform as the organizations central email server for our staff is one component of this strategy.

**Strategy 3.2: Server consolidation and virtualization**

Server consolidation and virtualization are important aspects of our IT strategy in optimizing the use and availability of our computing resources. Virtualization enhances and consolidates business flexibility and agility by making effective and efficient use of IT resources across networks, storage, servers and desktops. It allows us to consolidate and share our computing resources, and to deploy them quickly and as needed, thus improving server performance and management as well as enhancing our capabilities for fault tolerance and contributing to reducing power consumption. Virtualization will contribute to high performance computing, IT service resilience, and disaster recovery and business continuation.

**Strategy 3.3: Establish a cloud computing infrastructure**

Related to virtualization is our cloud computing strategy which provides further efficiency and flexibility in provisioning computing resources like MIS, CRM, HRM and financial software’s. In the coming years, we will strengthen our virtualized in-house environment to form the organizations private cloud infrastructure. Our strategy is to establish a solid private cloud infrastructure that can, at the same time, integrate seamlessly with compatible & global public cloud service providers to form a hybrid cloud to satisfy unexpected or sudden IT resource needs. IT resources/services provided from either public or private cloud will be totally transparent to our users. With such a hybrid cloud infrastructure in place, IT resources (e.g., servers, storages, portals etc.) can instantly and dynamically be provisioned on-demand from either in-house facilities or public clouds, depending on factors such as cost, time, duration, scale, manpower, etc.

**Strategy 3.4: Leverage open source tools/platforms and outsourcing**

In the past, we have relied mainly on proprietary technologies for central systems. With the maturing and wide adaptation of various open source technologies, tools and platforms, it is hard to ignore the cost effectiveness of utilizing them. Our strategy, moving forward, is to offer the organization the flexibility of considering both open source and proprietary technologies, judging on total cost of ownership (TCO) and return on investment (ROI) which gets tied to the user effectiveness in productivity. As part of this strategy, we are encouraging our IT staff to proactive participate in relevant open source projects both as contributors and influencers. Related IT policies for governing the use of open source technology will be established. The adoption of open source technology also empowers us to explore more cost effective outsourcing options from different parties rather than to rely purely on single vendor service. This open source strategy allows us to maintain and excel in our IT competitiveness while saving cost.

**Strategy 3.5: Improve IT organization effectiveness**

Besides cost savings through more efficient use of IT resources and reducing energy consumptions, costs can be saved through building up a more effective IT organization. Our strategy is to ensure there are ample opportunities for knowledge and experience sharing so that individual IT teams need not “re-invent the wheel.” Our IT workshops and forums (portals) are examples of these efforts as well as collaborations through our internal IT social network. Technologies, tools, platforms and applications created in one department are encouraged to be shared with the total organization.

**Strategy 3.6: Adopt and promote green IT**

Green IT is an important part of our strategy and support’s the organization’s sustainability drive. We will be adopting green IT at many fronts. Firstly, our new data center and terminal rooms will be equipped with environmentally-friendly equipment as well as provide more efficient control over energy consumption. Secondly, we will be working with departments and units to explore projects in paperless office, document management, automated workflow, etc. to further reduce paper consumption. Thirdly, we will be empowering staffs to contribute in reducing carbon through reduction in printing, recycling of paper/computers, and other environmental projects. As part of this strategy, we will be establishing relevant guidelines and policies to ensure only environmentally friendly computing equipment are purchased. We will also be establishing environmental performance measures, such as energy efficiency, into our key IT governance processes for IT facilities management, corporate social responsibility, and the related cultural change.

# Goal #4: Ensure IT Security

**“Our IT systems contain valuable personal, teaching, and research data. IT security is crucial and will be one of the main focuses in the coming years.”**

IT security has become a very critical issue with increased hacking, spamming and phishing. The organization urgently needs to establish an independent IT Security Office to define and review our IT security strategies, policies and guidelines. As a first task, this unit will need to define a formal information security governance framework to ensure proper processes are in place to effectively protect the organization’s information resources. This unit will proactively assess and mitigate any IT security risks as well as promote and enforce IT security policies and best practices. On the technology side, we will be enriching our security-related tools and systems as well as upgrading skill sets. In any organization, people are unfortunately always the weakest link for IT security. In this regard, we plan to increase our efforts in promoting security awareness among staff and interns.

**Strategy 4.1: Establish an IT Security Office**

We plan to immediately establish an IT Security Office headed by an IT Security Officer who will report directly to the CIO. This office will be responsible for establishing a set of organization-wide IT security policies, guidelines and procedures to be implemented throughout all departments and units as well as enforcing their compliance. It will also define IT security standards and best practices, and tools and technologies for all IT teams in the organization to follow and use.

**Strategy 4.2: Proactively assess/mitigate IT risks**

One of the first tasks the IT Security Office will perform is to create a strategic and holistic approach to enterprise IT risk management, by defining processes and procedures to classify, identify and mitigate potential IT security risks. The IT Security Office will work with BCN’s management to create a risk-aware organization by tying proper IT risk management to corporate performance and governance. It will also promote and train departments on risk self-assessment, and perform regular IT risk assessments and audits on core IT services to proactively rectify or mitigate IT risks.

**Strategy 4.3: Promote and enforce IT security policies and best practices**

Another responsibility for the IT Security Office will be to regularly promote IT security standards, policies, procedures, best practices through awareness campaigns, workshops, forums, etc. It will need to ensure that the general staff is well aware of the importance of IT security, the potential threats and risks, as well as their own individual responsibilities in this effort.

**Strategy 4.4: Enrich our IT security technology**

The IT Security Office will also be responsible for the continual assessment, recommendation and acquisition of up-to-date best-of-breed IT security technologies for use by all departments and units in the University. IT will work with other stakeholders to provide proactive and regular IT security services such as vulnerability scanning, penetration testing, and the hardening of our various servers.

# Goal #5: Enhance Transparency and Organizational Effectiveness

**“Transparency in how decisions are made and effectiveness of the IT organization in delivering quality services are important aspects of our strategy.”**

Transparency is important for any large organization. All major IT decisions need to go through broad consultation with stakeholders. In terms of service offerings, well-defined service level agreements must be in place to define commitments and expectations. A transparent organization is also an efficient organization. For organizational effectiveness, we strongly encourage collaboration among IT staff from different departments/offices and promote internal/external IT knowledge development. For organizational agility, we strive to nurture an adaptive and learning organizational culture and mindset. As an IT organization, it is natural that we promote the use of technology to enhance transparency. For example, through various social media, we flatten our organization and
eliminate departmental boundaries in collaboration. Social media also empowers us to achieve broader consultation with the entire BCN’s population.

**Strategy 5.1: Encourage collaboration among departments/offices**

We will continue to promote internal collaboration among various departments to improve transparency in decision making and IT project implementations. For example, we take initiative in streamlining processes and workflows that cut across departments by getting units to work together when designing new administrative applications. We also encourage collaborations among departments through our regular IT forums, workshops, trainings, and other engagements. We will of course need to maintain close contact with the BCN’s management so that any changes in organizational strategy or policy can be quickly supported with IT. To improve our agility in this area, we will explore opportunities to collaborate with departmental IT teams and leverage their expertise in joint development.

**Strategy 5.2: Internal/external IT knowledge development**

“Professionalism, integrity, and IT competence” are core values for the IT organization. We seek to provide ample opportunities for our IT staff to acquire new skills and keep abreast of latest developments in technology as well as international IT standards and best practices. This is done through rigorous professional training programs and certifications, and through active participation in regional and international IT professional bodies. Internally, the central IT team regularly promotes new technologies, standards, policies, guidelines, and best practices to departments and end users through awareness campaigns, workshops, and forums. As part of this strategy, we plan to establish a knowledge management (KM) platform to store and share our experience and to reduce duplicated efforts, thus further improving service quality and productivity.

**Strategy 5.3: Leverage technology to enhance productivity**

As a technology organization, we are used to using technology to maximize productivity. We plan to further expand and promote the use of some of these tools to our end-users to help improve productivity in their respective job functions as well as mitigate business risks. For example, we will be evaluating business intelligence
(BI) tools and analytics software to enhance various administrative departments’ ability to use data intelligently for decision making and planning. We are also exploring various workflow technologies to further streamline operations. For the IT organization, we plan to enhance productivity through a well-defined framework and methodology for IT infrastructure, operations, and management that makes continual and systematic improvements to reduce the underlying cost structure, improve efficiencies, increase flexibility and enhance IT service performance. This work also moves us closer to our objective of achieving international IT service management certification.

**Strategy 5.4: Using social media to improve transparency**

The IT organization makes use of social media to provide additional channels to interact with the general community and to perform informal consultation/survey. We also actively encourage and promote the use of social media across the organization. For example, we can create a portal that consolidates all our social media sites and provides social media search. Social media is an integral part of the organization’s marketing and public relations strategy. Associated with this, the IT organization defines and maintains BCN’s social media policy.

**Strategy 5.5: Streamline IT management structures**

We plan to review our existing IT organizational structure and define clear lines of responsibilities to improve governance and management. Roles will be clarified. Overlapping responsibilities will be eliminated. However, collaboration and knowledge exchange between IT teams will be encouraged. We will also take this opportunity to
inventory our services and assign tightly-coupled or similar services to the same team, so as to provide one-stop service to our end-users. We hope to devise an organizational structure that is more adaptive and responsive to changes in technology and business needs.

**Strategy 5.6: Nurture adaptive organizational culture and mindset**

Change is the way of life for IT. It is important that we nurture an adaptive organizational culture and mindset. For example, changes in organizational strategies and policies can often lead to cascading IT changes. To facilitate this, we will streamline our change management procedures so that changes can be easily and quickly accommodated within our processes at all levels, thus improving customer satisfaction and organizational agility. Our IT staff will need to be active listeners to fully understand end-user needs and objectively evaluate change requests according
to priority, time, and resource requirements. Related to this, we plan to enhance the skill sets of our staff in both business knowledge and IT management skills. The IT organization will also need to be a learning organization. We will work with the Human Resources Office (HRO) to devise proper staff development and talent-management
strategies to support this culture.

# Goal #6: Promote Policies, Governance and Standards

**“IT policies, governance and standards further strengthen transparency and enhance the quality of service we provide.”**

To make IT governance more effective, we plan to propose new IT governance structures for BCN that will further empower its members to make necessary IT investment decisions. This new IT governance structure should have authority to evaluate and define IT priorities as well as allocate necessary resources and funding. It will also be responsible for endorsing our various IT policies and guidelines.

**Strategy 6.1: Establish new IT governance structure**

Currently, the Committee on Information Services and Technology (CIST) determines and keeps under review policies governing the provision of information services and technology for BCN. This committee advises the Senate on IT issues and matters. Moving forward, we plan to review the overall IT governance structure with the possibility of proposing new policy-level structures to further empower stakeholders from administrative and academic departments to influence important IT decisions. These new policy-level structures will drive business values by establishing IT priorities, creating related oversight processes, and aligning IT governance with corporate governance. The policy-level structures should have authority to recommend resources and funding.

**Strategy 6.2: Define and update IT policies**

Existing IT policies need to be updated and new ones created to support changing business needs, technology advances, modern practices, and statutory requirements. Moving forward, we plan to adopt a formal approach and devise a policy framework based on industry best practices. The framework will consider key factors relevant to both technology and enterprise needs, such as the IT architecture (what technology and information to use and their relationships), the management and governance strategies (how to make things happen), policy (including principles, guidelines, and constraints of the policy), and strategy (what to do). The IT organization will work with our Internal Audit Office (IAUD) to regularly review and to ensure all IT policies are properly enforced.

**Strategy 6.3: Bring IT service to international standards**

The IT organization plans to formalize its service management structure and adopt international service management best practices, to ensure our service qualities are of international ISO/IEC 20000 and/or ITIL/COBIT standards. We will make use of systems such as the IT Service Management (ITSM), the Information Technology Infrastructure Library (ITIL), and other standards to ensure accountability and quality of service delivery, so that our IT organization can be benchmark against other world-class organizations. Mutually agreed upon IT service level agreements will be established between the IT organization and other units within BCN. Specific performance indicators will be identified and measured. Technology will be put into place to streamline
service management and make customer support and request/change management a seamless integrated process.

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