Week 1: Recommend a Policy Strategy

Nate Bachmeier

TIM-8190: Computer Science Policy and Strategy

September 5, 2021

Northcentral University

# Recommend a Policy Strategy

## Executive Summary

NCU-F specializes in Banking-as-a-Service and payment processing services across North America, Europe, and Asia. The organization has ten thousand employees that serve over a million customers. Those customers rely on the business for several integral capabilities, such as facilitating online purchases and enabling friends to send one another money. NCU-F also offers mortgage services, investment specializations, checking and savings accounts, and personal loans. Over the last decade, the organization has seen aggressive expansion through acquisitions. While this strategy enables the business to quickly reach new markets and deliver customer value, it also led to a fragmented technology platform. For instance, customers must maintain multiple distinct profiles and cannot easily navigate between the various products. Additionally, NCU-F is inefficiently utilizing its resources as many business units are recreating similar solutions to the same problems. The senior leadership team wants to improve upon these issues through IT Governance.

## Mission and Vision Statement

NCU-F democratizes financial servics through a comprehensive portfolio of capabilities. The company’s founders found that existing banking services were not inclusive, often penalizing small account holders with arbitrary fees. While this approach is profitable, it does not create a positive customer experience or lead to a sustainable business model. This long-term focus earned the organization a broad customer base, which fuels its ability to acquire innovative competitors. Today, the business has numerous financial products that exist as application silos without a consistent interface. Instead, NCU-F envisions modernizing these systems to improve cross-selling, reduce operational overhead, and standardize the experience. These capabilities would benefit the organization and its customers.

## Challenges and Limitations

Customers view NCU-F as a collection of different financial products which share the same branding and marketing. This perspective makes it challenging to cross-sell high-margin offerings, such as investment accounts and mortgages. Recently a focus group discovered that many customers are unaware of these additional services. Meanwhile, others complain that onboarding into these supplementary products is tedious and redundant. For instance, an existing customer with the savings and loan department has to create a different login for personal loans. When customers encounter these rough edges between applications, it creates nature points to stop exploring.

Internally, the business does not enforce any IT Governance policies, allowing each acquired company to continue utilizing its existing processes and applications. For instance, NCU-F has multiple Customer Relationship Management (CRM) and Enterprise Resource Planning (ERP) platforms. While this provides the most flexibility, it is more expensive and challenging to share information. Instead, through resource centralization, the business can reduce operations staff and negotiation better volume-licensing terms. Additionally, as critical systems like ERP and CRM consolidate, it moves the organization to a shared view of their customers, removes the rough edges, and improves the user experience.

# Strategic Goals and Alignment

The organization cannot provide the best-in-class user experience until it changes its IT Governance model. Only through a strategic alignment between the information systems and business goals can NCU-F present a unified product suite for its customers (Iyamu, 2015).

NCU-F’s governance model requires mechanisms and processes to enforce consistency, standardization, and choose the best-in-company implementations. These controls must foster intellectual (e.g., planning and infrastructure) and social (e.g., shared understanding) alignment across the organization (Ping-Ju, Straub, & Liang, 2015). When team members understand the desired end-state, they can more efficiently plan and prioritize work. It also removes design choices that would not align with business goals.

## Establishing an IT Steering Committee

The senior leadership team must create an IT steering committee that collectively agrees on the organizational patterns and practices. This group requires executive sponsorship to ensure decisions carry weight. When the committee identifies high-value work, such as centralizing customer identity, there must be processes to appoint a Single-Thread Leader (STL) (Bryar & Carr, 2021). An STL is a project owner who manages the goal’s lifecycle, governance, and stakeholder communication. This owner should not work on multiple goals in parallel, as it introduces project risk.

While the IT steering committee(s) establish patterns and practices, it would be unrealistic to assume complete uniformity. For example, the savings and checking business unit runs on Windows and .NET versus the personal loan features are written in Perl. Requiring that one group rewrites their implementation would be both challenging and a poor return on investment. Instead, the committee must focus on interoperability and code portability through industry standard patterns. For instance, each product should have an API (Application Programming Interface) that supports RESTful methods (Representational State Transfer protocol).

## Auditing IT Investments

Another expectation of the IT steering committee is to audit investments into IT resources (Ali, Green, & Robb, 2015). Many businesses like NCU-F purchase technology widgets to address challenges and introduce new capabilities. However, these widgets can fall to the wayside as new paradigms appear. For instance, most enterprise data centers have an Apache Hadoop cluster because the platform provides high-available and elasticity. Managing these environments is challenging, which gave rise to Kubernetes. Eventually, something cloud-native will supersede Kubernetes. Each application migration comes with costs and reliability risks. Businesses must be cognizant of these trade-offs and understand the reasons not to embrace new technologies blindly.

# Review of IT Systems

## Business Units

NCU-F has five core business units that need to integrate seamlessly through a consistent user experience (see Table 1). Both *Investment Accounts* and *Payment Processing* leverage modern technologies. *Savings and checking* have the most extensive userbase; however, it is reaching the end of life. Lastly, *Mortgages* and *Personal Loans* are standard open-source web applications without an API.

Table 1: Core Business Units

|  |  |  |  |
| --- | --- | --- | --- |
| Business Unit | Platform | Strengths | Weaknesses |
| Savings and Checking | * Windows/.NET * SQL Server 2012 | * Stable codebase * Most users | * High licensing costs * Reaching End of Life |
| Mortgages | * Linux/Python * MySQL | * Maintainable workflow service | * No API |
| Personal Loans | * Linux/Perl * PostgresSQL | * Stable codebase | * Few Perl developers * Legacy system |
| Investment Accounts | * Linux/C++ * Casandra * Kubernetes | * High Performance * Modern design | * High operational overhead |
| Payment Processing | * Linux/C++ * Kafka * Apache Hadoop | * High Performance * High Availability | * High operational overhead * High fixed costs |

## Networking

Each business unit is responsible for maintaining data center leases and procuring sufficient capacity. Within the United States, the data center locations are geographically closest to the original development team (before acquisition). NCU-F began standardizing international vendors for compliance requirements, such as Europe’s General Data Protection Regulation.

Table 2: Datacenter locations

|  |  |  |
| --- | --- | --- |
| Business Unit | Primary Data Center(s) | Secondary Data Center(s) |
| Savings and Checking | Wisconson, London, Hong Kong | Nebraska, Paris, Singapore |
| Mortgages | California | Oregan |
| Personal Loans | Texas, London, Hong Kong | California, Paris, Singapore |
| Investment Accounts | New York | New Jersey |
| Payment Processing | New York, Spain, Hong Kong, Tokoyo | New Jersey, Ireland, Australia |

# Identifying Initial Polices

IT Governance Frameworks define operating procedures, key performance indicators, and created business value. Organizations typically start with a standard framework, such as COBIT, ITIL, and ISO 270001, and then customize it to fit their needs (Lindros, 2017).

## Datacenter consolidation

Since NCU-F has finite resources, it must prioritize changes and release management operations. For instance, consolidating workloads into fewer data centers might reduce networking complexity and enable more competitive volume-licensing terms. However, the business might instead choose to rehost the applications into the cloud. This migration could align with a hardware refresh or similar cutover event. While moving to the cloud offers several unique capabilities (e.g., elasticity and instantaneous provisioning), it does not directly serve the business goals.

## Application Integration

Instead, the IT steering committee(s) must focus on application integrations capabilities, such as APIs and service contracts. Additionally, business stakeholders should establish KPIs that monitor those integrations’ usefulness. For instance, customers with savings accounts want to invest in the stock market automatically every payday. This scenario does not exist today, but new processes can add this behavior. Afterward, KPIs can report how many customers use the feature.

Business Development Managers (BDMs) can prioritize other natural integrations, like one-click applications for a personal loan. Supporting that capability requires significant coordination across Service Level Agreements, protocols, and data models. The steering committee will also need to decide between building, buying, and outsourcing those capabilities. For example, the legacy codebase might contain too much technical debt to accommodate the changes quickly.

## Consolidate Internal Applications

NCU-F can consolidate its internal CRM and ERP systems to improve reporting and data consistency. However, those changes might raise security and compliance challenges. Consider the risks from anyone in the company being able to view customers’ transaction data. IT Governance teams must first define acceptable use policies and establish authentication, authorization, and auditing enforcement mechanisms.

# Conclusions

NCU-F wants to democratize financial serves through a comprehensive portfolio of capabilities. Globally, the business has many customers that use their services every day. However, a misalignment between the IT strategy and business goals makes it challenging for customers to explore new offerings. This fractured experience discourages cross-selling services and degraded user experience. The organization needs to establish IT Governance patterns and practices, like an IT steering committee and STL management model. These mechanisms and processes enable change across matrix organizations, like NCU-F.

There are several potential areas to improve, such as data center consolidation. However, the leadership team must be cognizant of prioritizing business goals over purely technical plans. Customers do not care if an application runs in the cloud or a private data center. They only care that it performs its function securely, reliability, and consistently. Those requirements make focusing on the application integrations more appealing. While the business makes the necessary changes, it will also encourage intelligence and social alignment. Through an ever-increasing alignment, future work will come easier and regularly.

# References

Ali, S., Green, P., & Robb, A. (2015). Information technology investment governance: What is it and does it matter. *International Journal of Accounting Information Systems, 18*, 1-25. doi:10.1016/j.accinf.2015.04.002

Bryar, C., & Carr, B. (2021). *Working Backwards.*

Iyamu, T. (2015). *Strategic Information Technology Governance and Organizational Politics in Modern Business.* IGI Global. Retrieved from https://www-igi-global-com.proxy1.ncu.edu/gateway/book/124236

Lindros, K. (2017, July 31). *What is IT governance*? Retrieved from CIO: https://www.cio.com/article/2438931/governanceit-governance-definition-and-solutions.html

Ping-Ju, S., Straub, D., & Liang, T. (2015). How information technology governance mechanisms and strategic alignment influence organizational performance. *MIS Quarterly, 39*(2), 497-A7. Retrieved from https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,sso&db=bth&AN=102375761&site=ehost-live&scope=site