Case Study: An Cheim, A Higher Education Shared Service That Works

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The An Chéim experience proves that shared services and even outsourcing are viable options for higher education institutions. In this report, higher education CIOs considering shared services will find information about critical success factors, such as the common standard design (CSD), and will gain insight into the unintended consequences of a strong shared-service organization.

Key Findings

- Strong leadership implementing a CSD was crucial to the An Chéim shared service success.
- A lack of institutional engagement in governance is a common but major risk in shared-service implementations.
- A common implementation of information systems offers great opportunities for benchmarking and the sharing of best practices.
- A centralized shared-service organization, simply by virtue of its position as a hub, risks being dominant in setting the strategic direction for both demand and supply management without engaged governance.

Recommendations

- Spend a lot of time upfront implementing a transparent governance structure with key stakeholders from each organization, otherwise the project will suffer in terms of credibility and the ability to change, which impacts time plans and budgets.
- Work on your communication plans. Broad communication (such as all faculty using a specific system) and targeted communication (such as the board or local IT managers) are crucial. Using “branded” concepts, such as the CSD, is helpful.
- Do your homework in setting the standard. Good process mapping and process re-engineering are crucial to set the standard and should be used to facilitate change.
1.0 What You Need to Know

The An Chéim (which in Irish means "degree" or "step") experience proves that shared services and even outsourcing are viable options for higher education institutions. External government pressure, a clear vision of a standardized solution and strong leadership that does not veer from the course during implementation are critical success factors. However, a culture of immature governance and a lack of communication need to be addressed to achieve long-term success. This is vital because a centralized shared-service organization, simply by virtue of its position as a hub, risks being dominant in setting the strategic direction for both demand and supply management without engaged governance.

2.0 Introduction

The job of the higher education CIOs continues to become more complex. IT is more integrated in, and strategic to, the institution of today, making demand management a critical capability for IT effectiveness. At the same time, the options on how to provide or "source" IT is increasingly making supply management a critical capability for IT efficiency. The situation has developed from "build and run it yourself" as the only option to software options ranging from custom development to commercial packages, via open-source and community-source alternatives, as well as operations options, in what can almost be described as a continuum from in-house to cloud sourcing, including options such as shared services and managed services. The issue of how to source IT operations resurfaces periodically in all institutions when stakeholders question whether they are getting the right value for their money. It is critical for the higher education CIOs of today to be aware of the benefits and disadvantages related to different sourcing options. Correctly assessed, they can be used as genuine tools for improvements in efficiency or as options to use in objective comparisons.

This Case Study looks at the mechanisms behind a 15-institution shared-service venture that started as a quality initiative from the Department of Education and Science (DoES) in Ireland and gradually took on a more cost-cutting profile with a large component of the solution being outsourced.

3.0 The Challenge

The challenge has its root in Ireland's "Celtic Tiger" economy of the 1990s, when an exploding need for skilled workers made the DoES invest more in its institutes of technology to increase the capacity in terms of academic scope and numbers of students. The increased government spending was followed by a greater need for institutional accountability and overall measurable "political return on investment" (ROI) of taxpayer's money. A key problem in achieving this, from the DoES's point of view, was data quality. Since the department controls a majority of the funding that goes to the institutes, it was a major factor in initiating the dialogue that eventually led to the decision that 15 institutions (see Note 1) should have the same administrative systems. The goal was to facilitate standardized reporting and optimize the implementation cost, or, in the words of the then newly appointed general manager of An Chéim, the organization charged with the execution of the mission: "Buy once, build once, implement many times."
4.0 Approach

4.1 Stage 0: The Inception of An Chéim

The earliest ideas related to shared services for the institutes of technology (IoTs) can be traced back to a joint study group formed in 1993 by DoES and the IoTs, with the mission to "examine the feasibility of providing the institutes with common management information systems." The group came to a positive conclusion, and the Department of Finance approved the project in August 1996 with a total funding of €7.5 million. At that point, the IoTs did not have centralized shared services in mind, but had really only agreed to common procurement. Initially, a project steering committee was established under the chairmanship of the director of Tallaght Institute of Technology and included representatives of DoES; the Dublin Institute of Technology (DIT), the largest institute (considered to have a somewhat different status from the other IoTs); and a number of other institutes.

4.2 Stage 1: Common Standard Design, Common Systems and Common Implementation

From 1997 through 2001, the project was manned and planned, and software and implementation services were procured. As the project took more-solid form with the approaching implementation, it was realized that the project had large flaws in its plan and that a major problem was the lack of institutional engagement. Consequently, the steering committee was replaced in 2000 by a consortium board representing the IoTs and DoES, and led by an independent chairperson. From then on, the consortium board had ultimate responsibility for the overall implementation of the project. According to the project plans presented in 2001, the project budget was €44.5 million, the personnel requirements were 45 full-time equivalents (FTEs) and the project deadline was January 2005.

The original mission focused on purchasing a common set of administrative applications to support the core processes of the institutions. These applications were defined as the student information system (SIS), finance system, HR and payroll system, and the library system. Later, a timetabling system was added.

The key approach to increase the quality of data and limit system implementation costs was the CSD, also expressed as, "Buy once, build once and implement many times." An Chéim collected the requirements for each system from all the institutions as well as DoES and turned them in to a common RFP that was used to choose applications and implementation partners. The initial strategy for sourcing was to pursue a distributed model where each institution runs its own application. The implementation projects used a phased approach to implementation in which the necessary adaptations to suit the Irish educational system were made centrally and the applications subsequently rolled out to the institutions in stages, making use of the experience collected in each stage. A more detailed set of implementation principles can be seen in Note 2. From 2001 through 2H05, 59 system implementations were made at the 15 institutions.

4.3 Stage 2: Centralization and Outsourcing

During the initial stages of implementation at the institutes, it became apparent that the lack of resources and skills at some of the institutions was a severe risk to attaining the goals of the overall plan. Furthermore, improvements in the networking infrastructure enabled a centralized model as an option. In August 2002, an evaluation of both a distributed model and a centralized model was started. The report, delivered on 13 January 2003 (see Note 3), clearly supported a centralized model based on the following main benefits:
• Ensures that the investment in CSD is protected and the intended objectives are realized
• Critical mass of skill through sustained delivery of specialist expertise and robust strength-in-depth user and technical support
• Significant infrastructural and organizational cost savings

According to the report, the lasting benefit was estimated to be €4 million to €5 million per year using “fairly conservative assumptions.” The savings related mainly to fewer people needed to run the service and hardware consolidation. To date, no formal benefit realization study has been done.

During the decision process of which model to choose, the option of using the highest possible degree of outsourcing for the centralized model was introduced. This was due to a shortage of skilled personnel, the risk associated with skill development, an anticipated further cost saving and a reluctance by the DoES to hire additional permanent staff with the associated expensive state pension entitlements.

In 2Q03, it was officially decided that a centralized model with outsourcing should be piloted and a tendering process started. However, the original decentralized implementation continued as planned, while the new plans and procurement were done in parallel. The cost for the implementation of the centralization was estimated to be €2.5 million and expected to be completed by mid-2006.

To handle this new situation, An Chéim Computer Services, a company with charitable status, was formed by DoES along with the 15 institutions in August 2005. The company is wholly owned by DIT and funded by DoES via DIT. The governance structure is comprised of a board of eight directors from DIT (two representatives), DoES (two representatives) and the rest of the IoTs (four representatives). Reporting to the board are two steering committees: academic/student and finance/HR. The budget is constructed by the CEO of An Chéim together with the steering committees, and then discussed and approved by the An Chéim board.

According to an official report by the Comptroller and Auditor General, “The total cost incurred in implementing the systems was approximately €58.42 million. Costs were incurred both at a central level through the central services unit established to manage the project and at a local level by each of the institutes. Total project expenditure exceeded budget by approximately €5.7 million.”

5.0 Results

5.1 The Decentralized Implementation Phase

The first contract was signed in December 1998, with SunGard Higher Education (then Systems and Computer Technology Corporation [SCT]) for the Banner suite that included SIS, HR and finance modules with the intention of implementing an integrated system. A library system, Millennium, which was not available through the Banner suite, was bought from Innovative Interfaces in March 1999. By the end of 2002, the library system was live in 14 institutions.

Implementation of the Banner suite proved to be more complicated than originally anticipated. Although the contract was signed with the knowledge that the Banner suite had considerable gaps in functionality with regard to the needs of the Irish IoTs, it was believed that the plans to address those gaps were adequate and that the benefits of an integrated system outweighed the functionality gaps. However, by 2001, a more detailed analysis of the functionality gap in the financial module and knowledge about a change in strategy regarding the internationalization of
the full Banner suite by SunGard made it clear that the cost of adaptation and maintenance would be too high.

According to an October 2007 report by the Auditor and Comptroller General to the DoES, "The cost of modifying the software was estimated to be between €1.3 million and €3.8 million with at least two years being added to the time frame for the project. Ongoing costs would also arise since most of the modifications would not be incorporated in the baseline Banner product, making the future support of the system both complex and costly."

Further analysis showed that a consequence of not implementing the Banner finance module would be that most of the benefits of the integrated HR module would disappear and that there would be only an "18% residual fit with the institutes' requirements." In these circumstances it was decided, together with SunGard, to keep only the SIS (Banner Student), and renegotiate the contract and procure replacements for the Finance and HR modules. Even with this delay, the project went ahead with the phased approach of implementation and had Banner SIS live in seven institutions by the end of 2002. The finance system replacement was Agresso Finance from Unit 4 Agresso through its Irish partners Mentec. At the end of 2002, two pilot implementations were in progress at DIT and the IoT in Limerick. The HR/payroll system replacement was Core from Core International. By January 2003, the first implementation went live at the IoT in Galway-Mayo. All 59 system implementations were done by 2Q05.

Toward the end of 2002, it became clear that lack of resources and skills at some of the institutions was a severe risk to attaining the goals of the overall plan. At that time, an evaluation of benefits and detriments of a centralized versus a distributed model was commissioned. In retrospect, it was obvious that the considerable customization of the Banner SIS, combined with the complexity in integration of the applications, would strain the skills and resources of all but the largest local IT departments. The decision to go with a centralized model was therefore easy to accept from a skills perspective and from an operational cost savings perspective. In January 2003, a central hosting project was initiated.

Despite the decision to centralize, all systems continued to be deployed locally at the IoTs. During 2Q05, the last two systems were implemented. The main tasks were divided as follows:

- Hardware — Local
- Technical Support and Maintenance — Local
- First-Line Functional — Local
- Second-Line Banner Functional — An Chéim Central Team
- Banner Development — An Chéim Central Team
- Other Applications Support/Development — Vendors

During the implementation phase, An Chéim employed 40 to 45 FTEs. No official numbers have been reported for how many people the local IoTs employed. However, the cost was estimated at €13.7 million — more than 50% more than the budgeted €8.2 million.

5.2 The Central Hosting Project

A proof-of-concept pilot for the central hosting of Banner Student was done at two institutions during a full academic cycle. The board reviewed this pilot, and all the institutes were polled to secure a good basis for the decision. In March 2003, it was decided to start the tendering process for the central outsourced hosting service:
• November 2003: Prior Information Notice (PIN) published in the Official Journal of the European Union
• May 2004: Contract notice published (negotiated procurement procedure)
• June 2004: Pre-qualifying questionnaire responses evaluated
• July 2004: Invitation to tender circulated
• September 2004: responses received
• November 2004: Evaluation of responses complete (see Note 4 for selection criteria)
• November 2004: Invitation to due diligence
• January 2005: Preferred vendor produces due diligence report and pricing
• February 2005: Presentation to board and a go-ahead decision
• March 2005: Final contract negotiation
• April 2005: Contract execution
• May 2005: Contract goes into effect and staff transition to service provider, and transition implementation begins for Agresso, Banner and Core
• July 2005: Transition implementation for Millennium begins
• May 2006: Transition for Agresso, Banner and Core for all 14 sites completed (DIT chose to run its own systems)
• July 2006: Transition for Millennium for all 14 sites completed (DIT chose to run its own system)
• Twelve-month transition phase cost of €2.5 million
• Seven-year contract overall cost of €20 million

When the negotiated procurement procedure was finished, An Chéim ended up outsourcing the following:

• Central hosting of the four production systems for each institute
• Central hosting of all preproduction systems for each institute
• Transitioning of institute systems into hosting facility
• Managed service desk
• Application development and training
• Central hosting of the An Chéim office environment
• Management of LAN environment in An Chéim
• Professional services

The implementation was a phased approach over 12 months, including piloting, validation and user-acceptance testing. The systems were transferred in waves of three to five institutions at a
time. Preparations included "wave-specific" technical workshops and an implementation planning questionnaire. All systems were centralized in July 2006, except for DIT, which chose to run its own systems.

After the centralization and outsourcing had been completed, An Chéim employs 16 FTEs and predominately functions as a project management office (PMO). Other important tasks are service management, for coordinating and monitoring services providers, and finance management to have control of current spending and resources for new projects. The PMO function involves mainly the conceptualizing, scope, cost and planning of projects, which are then usually outsourced and only monitored and controlled by An Chéim. The types of project typically included are:

- Strategic projects (as defined by the IoTs)
- Value-added projects (such as new functionality/products to improve productivity)
- Application upgrades (such as Banner upgrades)
- System upgrades (relational database management system/operating system)

Overall, the project is considered a success, especially in view of succeeding to pull through a common system implementation for 15 essentially autonomous institutions. As can be expected, the smaller institutions are more satisfied than the larger ones. The smaller institutions perceive that they receive a level of service that they could not afford on their own, while the larger institutions perceive that their freedom in administrative processes has been reduced. Most institutes perceive that they have access to better information as a result of the project. However, right now, they believe that this comes at the expense of more work. Thus, the key benefit anticipated — that key staff would be freed up to focus on core business — is somewhat in dispute; but the institutes do concede that they use the freed up staff to do reporting and analysis of data rather than running a system. The overall perception is that the project delivered a service with new functionality and higher quality, but at higher costs.

6.0 Critical Success Factors

- The most important critical success factor for the An Chéim shared-service venture is the concept of a CSD and having strong leadership that would stick to it. This avoided scope creep and enabled a reasonable implementation time. Most shared-service ventures in higher education fail when the shared-service stakeholders perceive their processes and system implementations as "too special" and there are no strong leaders to establish a common process. The CSD was also crucial for the ability to centralize and outsource, which in the end saved the institutions millions of euros and released key staff to support the core processes of the institutions. The major downside of the CSD, in the words of an institution staff member, was that "we have to wait until the slowest person comes up to the line before we can do anything." (See Note 5.) This has led to substantial developments of shadow systems in some institutions, specifically regarding the need for internal reporting.

- The strong and committed leadership of An Chéim in itself was a critical success factor, especially in dealing with the failed plan to implement the full SunGard Higher Education suite. Relatively quick decisions to define and adopt a contingency plan, together with relentless follow-up, were major factors in saving the project.

- The involvement of the DoES and the focus on solving its needs, together with the fact that it owns the funding and the mission of the institutions, is another key factor in the successful implementation of the An Chéim shared services. The benefits continue, as
there is now a single point of contact to keep track of government reporting requirements and a single place to change basic reports.

- Consolidation and centralization saved money and streamlined the work. A more professionally focused PMO has been able to manage multiple projects simultaneously with higher quality. This, together with outsourcing of non-higher-education skill-related tasks, has enabled a greater pace of change.

- A key skill that had to be obtained as well as adequately staffed was vendor relationship management. Both a supplier overview role and dedicated resources to manage the service providers had to be implemented and staffed quickly. Especially the realization of many of the involved staff that higher education is a "complex business" meant that considerable time had to be devoted to educate the vendors about higher education culture. In addition, An Chéim achieved a more professional commercial relationship with the vendors that improved cost-effectiveness and timeliness of service delivery.

- An important success factor was to introduce formalized service-level agreements to manage the institutions' service expectations.

7.0 Lessons Learned

- The major lesson learned and the source of most of the problems encountered in the An Chéim shared-service venture was the lack of "business process mapping" overall, and, in particular, the student support processes. From the view of some of the institutions, the project was driven more with a CSD focus and to meet the demands of the DoES than understanding and meeting the needs of the institutions. Although this philosophy worked reasonably well in the somewhat more easily governed and more contained areas of finance, HR and library, it encountered problems in the area of student administration, which is heavily integrated in the core process of education. Banner Student was identified by some institutions to meet the functional requirements to only 20% in its baseline configuration. This led to substantial local development in some institutions as they tried to minimize the gap in functionality. However, in the end, most agreed that better information was obtained, although it required more work. The institutions also recognized that if full process mapping and full faculty input had occurred, the full shared-service venture would have been stalled and possibly abandoned. Gartner has found that other institutions have faced the same challenge (see "Case Study: The Seven-Year Journey From Chaos to Order at Chalmers University of Technology"). The lesson learned was to build resources at the central level that would quickly absorb and prioritize new requirements to incorporate commonly needed changes into the CSD. It is also possible that DoES wanted to achieve this effect, as more standardization promotes not only data quality but also student mobility — both with Ireland and internationally — in accordance with the intentions of the Bologna Process. Another consequence of the fact that the IoTs’ processes were never formally re-engineered to match the underlying model of the administrative systems was that staff not only had to adopt a new system, but also had to change how they operated and introduced new practices, which is a well-known hurdle in change management related to system implementation.

- Another major lesson learned was the realization of resource and skill gaps that existed in some institutions, which led to the centralization and outsourcing decisions. In this context, it was also noted that all involved personnel needed recurring training to maintain and increase the degree of "systems exploitation" and service quality. This was especially visible in the roles where the institutions had a high degree of turnover.
Keeping all stakeholders happy demanded good communication skills. Both broad communication (such as all faculty using Banner) and targeted communication (such as the board or local IT managers) was needed. A perception that changes occurred without adequate warning, or in the words of an IoT employee, "It came in overnight without anyone really having full warning," gave the impression of end-user resistance that, in some places, took a long time to overcome (see Note 5). A positive effect of the pooling of resources and 15 institutions using the same system was that it enabled benchmarking and exchange of best practices as well as lessons learned. A very good example is the Systems Exploitation Report (see Figure 1), which showed how well the institutions utilized the functionality that was actually implemented. This kind of communication based on objective data is absolutely crucial in a shared venture with so many stakeholders. Failing to do this will result in isolated incidents becoming far-reaching anecdotes that can badly impact the perception of the service. Even if this data-based communication has improved, with, for example, the Systems Exploitations Report, there is still a lack of a full benefit analysis that includes money and a lack of user satisfaction surveys that can help in prioritizing maintenance and new projects.
Figure 1. Banner Usage: Submodules Used as a Percentage of Total Submodules

General Person: 65.3%
Admissions Direct: 34.8%
Admissions CAO: 69.2%
General Student: 83.0%
Catalogue: 98.2%
Approved Course Schedule: 82.9%
Sections/Blocks: 100.0%
Registration: 78.6%
Maintenance Grants: 92.9%
Accounts Receivable: 46.4%
Examinations and Academic History: 67.3%
End-of-Term Processing: 84.5%
Graduation: 5.7%
Communication Plans/Letter Generation: 7.1%
Population Selection: 35.7%

Source: An Chéim Exploitation Report (July 2007)
A key lesson learned is how difficult it is to build and staff a governance framework that involves key representatives from the institutions in a meaningful way. The An Chéim still suffers from an immature governance framework that does not promote the knowledgeable and accountable decision maker. This results in An Chéim having to make decisions in areas that rightly belong to the institutions, and they also explain some of the communication problems that have occurred. Although this is a common situation for higher education institutions, there are ways of building the transparency and trust needed for effective governance (see "Three Simple Tools for Building Trust: A Key to Sustainable Decisions in Higher Education"). Unfortunately, this situation might get worse. With its systems implemented and operations outsourced, the role of An Chéim has changed. An Chéim has increasingly taken the role of demand manager and creator of information systems strategy. Simply sitting in the midst of all stakeholders collecting information on problems, demands and system opportunities creates a situation where An Chéim is uniquely positioned to continuously do business and functional development, and thereby put forward proposals for future information system strategies. Due to its position, An Chéim has become an IT power factor, making the need for a transparent governance framework that secures the engagement and influence of all stakeholders even more critical. An Chéim’s role today is unclear: Will it remain a service management office and a PMO, or will its role evolve to become demand manager and approximate the role of the CIO office for all institutions? A telling sign of this uncertainty is that on An Chéim’s Web site, under the heading Mission Statement, is the following text: "An Chéim Board is currently in the process of drafting the An Chéim Mission Statement."

**RECOMMENDED READING**

"Defining IT Governance: The Gartner IT Governance Demand/Supply Model"

"Shared Services in Government: Getting It Right"

"Government Shared Services: The Evolution Continues"

"Shared Services Differ From Centralization"

"Case Study: Business Process Analysis Underlies Launch of Local Government Shared Service in the U.K."

"Case Study: West Sussex Accessible Services Partnership, a U.K. Shared Service"

"Case Study: Customer Service Direct, Partnering With Service Providers for Shared Service"

"Alternative Delivery and Acquisition Models, 2008: What's Hot, What's Not"

"A Proven Simple Visual Tool to Aid the Service Portfolio Dialogue Between Higher Education Stakeholders"

"Three Simple Tools for Building Trust: A Key to Sustainable Decisions in Higher Education"

"Case Study: The Seven-Year Journey From Chaos to Order at Chalmers University of Technology"

"Mastering Multisourcing"

"Shatter the Eight Myths of Outsourcing"

"Gartner Higher Education E-Learning Survey, 2007: Sourcing and Support"
Note 1
Institutional Stakeholders

- The Dublin Institute of Technology is Ireland’s largest IoT, with a greater focus on research than the other 13 IoTs, although this gap, in proportional terms, is closing. DIT traces its roots to 1887, but was established officially in 1992 by the Dublin Institute of Technology Act.
- The 13 institutes of technology (IoTs) were newly founded as "regional technical colleges" in the 1970s but are now designated as IoTs under the Institutes of Technology Acts 1992 to 2006 (see also www.ioti.ie/index.php).
- The Tipperary Institute was established by the DoES in 1998 and has a different mission and organizational form than the other institutions.
- These 15 institutions collectively provide about 40% of the tertiary education in Ireland. They enroll more than 530,000 full-time students, of which DIT enrolls about 11,000. The average full-time enrolment of the other An Chéim institution is about 3,100.

Note 2
Implementation Principles

A number of implementation principles underlie an An Chéim project. These principles are valid regardless of the model that is used, and set limitations on the options that can be implemented under a centralized or distributed approach. The principles are:

- Each application has a CSD.
- All institutes must adhere to the implementation approach for An Chéim. Individual Institutes cannot adopt variant approaches.
- The institutes retain ownership of their own data and are responsible for maintaining their data.
- The institutes retain control over the operation of the applications.
- The institutes retain control over user access rights to the applications (for example, setting up, deleting and adjusting access rights).
- Institutes can change the business rules of the applications, but these changes must be within the parameters of the CSD.
- Institutes can develop and run reports and interfaces that do not alter the CSD.
- Institutes cannot change the basic configurations of applications if such changes alter the CSD.
- Institutes cannot change database structures that support the common standard design by (for example) altering table structures, triggers, constraints and keys.
- Changes to the common standard design are done centrally in consultation with the institutes.
• An Chéim is responsible for defining upgrade paths for the hardware, operating systems and products used to support the An Chéim applications.

• Institutes cannot use the servers provided to deliver An Chéim applications for other purposes.

• Distributed resources, such as PCs, LANs and printers, will be managed locally.

• Preproduction/test environments will be provided centrally.

Note 3
Project Status, 13 January 2003

At this time the library system was installed in 14 institutes, the SIS in seven institutes, and the financial and HR systems were piloted in one institute each.

Note 4
Selection Criteria

• Overall quality of the data center

• Service delivery and support, including process/people/service levels

• Ability to address requirements of software development and provision of professional services

• References and existing customer service satisfaction levels

• Commercial considerations, including value for money

• Ability to address Banner knowledge gap

• Design of the overall infrastructure architecture, including the WAN backup solution

• Completeness of service offering

• Transition implementation plan

• Demonstrable ability to understand and meet the requirements of the contracting authority

Note 5
A Review of the An Chéim SIS Implementation
