

Aligning Trading Rooms with a Business School's Strategy

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Abstract

Over the past several years, our business school has been incrementally designing and building a Financial Technology Center or "Trading Room." There are many reasons to build such a trading room, foremost to enhance students' learning. However, marketing of the business school and determining how this technology center fits into the school's overall strategy also are major considerations. In this paper, we deal with how a trading room fits (or can fit) into a business school's strategic alignment of IT (SAIT).

Keywords: Trading Room, Technology Center, SAIT, Strategic Alignment of IT

1 INTRODUCTION

Crafting technology strategy should be an offshoot of crafting a general strategy for all organizations, including business schools. The strategy should attempt to align technology with the school's overall strategy and mission. Aligning technology strategy with overall business strategy is known as the **strategic alignment of information technology** or **SAIT**. This alignment should govern the expenditure of technology resources and be driven by the organization's mission statement and objectives.

When creating strategy alignment, the business school should take a theoretical perspective of how it views information and communication technology (ICT) resources. Two approaches are in the mainstream:

- 1) The **resource-centered perspective**, which considers ICT a strategic resource when properly combined with other strategic resources (Oh & Pinsonneault, 2007). This view assumes that the association between the scale (size, resource commitment, amount, etc.) and scope (uniqueness, type, etc.) of the ICT investment are positively associated with organizational performance (see, for example, Barua, Kriebel, & Mukhopadhyay, 1995; and Dehning, Richardson, & Zmud, 2003.)
- 2) The **contingency perspective**, which states that ICT resources add little value unless they are planned to support an organization's main strategic objectives (Chan, Huff, Barclay, & Copeland, 1997).

This paper adopts the **contingency approach** and proposes what business schools should do to incorporate this approach into its best practices. At a very high level, business schools need to give thought to (1) how building a trading room aligns with the school's overall strategic plan; (2) how a trading room adds value for students and other stakeholders; (3) how and why they are building a trading room; (4) how the expenditures of those ICT resources enhances learning; and (5) whether the trading room will increase the stature of the school.

2 AN OVERVIEW OF TRADING ROOMS

Many universities have installed "Trading Rooms" as functional additions to their business programs, especially for use in their finance program. These facilities range from spectacular two-story glass-walled rooms with many workstations of full-function terminals that support financial analysis to more modest installations.

Although these facilities generally are referred to as “trading rooms,” they typically are used for a variety of purposes beyond just simulating trading. They are more correctly “financial technology centers” or “applied finance labs,” but the terminology of “trading room” seems to have stuck. These questions remain: Are trading rooms a cost effective use of scarce ICT resources? Do they provide enhanced learning experiences or attract better students into business school programs? These are difficult questions, and the answers require that business schools understand why they are building a trading room and that they put measurement systems into place to capture the data required to make an intelligent determination. Measurement systems and their alignment with strategic objectives are discussed in some detail below.

Anecdotally, trading rooms have been found to be effective not just for teaching but also for enhancing the image of the school. These facilities are technologically advanced and create an image that the school is technologically advanced. This image is certain to impress prospective students and their parents as they visit these rooms, as well as prospective faculty, alumni, donors, and other community members. It is a way to show, in concrete physical terms, that your school is committed to offer leading edge programs that use state-of-the-art technology to prepare students for careers in the business world of today and tomorrow. While it once was a competitive advantage to have one of these trading rooms, it now can be a clear disadvantage not to have one. Tantamount to realizing the advantages of building a trading room, the business school must understand the impact that its trading room has on students and other stakeholders. ITC resources must be expended so a trading room will bring about positive impact for students and other stakeholders. The trading room must improve student learning as well as elicit donations by showing stakeholders how the existence of a trading room create benefits. Some institutions have the resources to custom design and build a trading room in a single project. However, our business school had a very limited budget and space constraints. This meant that we needed to retrofit an existing classroom into a multipurpose room that could continue to be used as a classroom even though the technology necessary to create a trading room environment would be installed there. This trading room has been a work in progress. While this is not the best way to undertake a project of this type, it has provided some useful insights.

2.1 HOW TRADING ROOMS ARE USED

Most recent publications on trading rooms have dealt with what do with them once they are built and how to utilize specific programs. For example, Siam (2005) explains how trading rooms add value to the business curriculum and gives an example of an MBA class that utilizes the trading room. Lyman and Stone (2006) discuss the use of a trading room to develop risk management competency, and Bristol, Fehr, and Johnson (2005) described their experience in financial literacy training using a trading room. Similarly, Coe, Kilic, and Isik (2007) discuss using a trading room to develop a market microstructure course and Coe (2007) discusses using the Bloomberg System for finance classes. Alexander, Heck, and McElreath (2001) offer a very nice guide to building a trading room, which includes significant information about databases available. The techniques discussed by these authors, and implemented in their classes, are very useful. However, our goal in this article is to discuss best practices for using ICT resources. This will aid business schools in determining the best way to achieve SAIT before investing substantial ICT resources.

3 OUR UNIVERSITY’S TRADING ROOM – HOW IT WAS FUNDED

Our school approached the building of the trading room incrementally, combining trading room technologies with other resources already available on campus to create the best student-centered teaching environment it could. This follows the resource perspective discussed earlier; below we discuss how using the contingency perspective would have a more preferred outcome, most notably a sustainable trading room environment. Using a resource centered approach worked in our environment, but it is not the best way to invest ICT resources. Due to budget constraints and the administrative milieu when the trading room project was started, the resource approach was the only way this trading room project was going to get any attention or funding. Further, the management imperatives at our university required an organic approach to building the trading room, but that has had less than the desired effect. Since annual budgeting is impacted by the creation of a trading room, and since there often is a lack of funds in annual budgets to support what appears to be an ad hoc effort rather than a planned one, resources varied significantly from year to year. This meant that technologies often were not refunded after an initial year or of two of using them. It is much better to use a contingency approach and plan long-term for annual costs (e.g., subscription fees, hardware maintenance, data feeds, etc.). The goal of our trading room is to provide students with hands-on experience and skills used in business, thus making them more desirable in the job market.

Clearly, skills gained through learning to use technologies available in a trading room are valuable for students to include on their resumes. Despite the benefits to students, our major problem was ongoing funding. Our finance department has a limited budget and does not support the creation or annual cost of running a trading room. Financial databases and analytical terminals were once provided free, however that option was not available to us. We found that academic pricing is often very high, and in some cases at the same price as commercial licensing. While we initially had databases and analytical terminals installed in our trading room, the lack of annual budgeting for these technologies, coupled with changes in pricing structures by vendors, eventually put many of these technologies (e.g., Bloomberg and other data providers) out of reach for us. Without a sustainable vision and budget for the trading room, we have had issues keeping our technology operational. As we are a government institution, occasionally there was bond money available for capital purchases but not for ongoing annual subscriptions. We received some grants and corporate gifts, but they are typically one-time only and require constant refunding. The problem of budgetary sustainability is one that we deal with on an ongoing basis. Had we approached this project from a contingency-based strategic perspective and created an initial proposal with ongoing annual costs built into a regularly funded budget, we might have had greater success with the continual funding needed to support a trading room. However, the environment at our university (and many other state schools) made it necessary that we use a resource-based approach and look for funding annually, rather than have our trading room be part of our school's annual operating budget.

3.1 BUILDING OUR TRADING ROOM

As we embarked on building our trading room, we soon realized that the major components we would have to consider were:

- **Space** – in our case this meant retrofitting an existing classroom and sharing that classroom with non-business classes; we also needed to locate space for servers and other equipment necessary to support the trading room environment.
- **Equipment** – a number of hardware and software technologies had to be purchased and installed to create a trading environment.
- **Subscriptions and Databases** – it was necessary to obtain services like data feeds for the stock ticker and data boards as well as other specialized databases for financial information.
- **Lab Coordinator Salary** – a trading room requires a lab coordinator who is responsible for technology maintenance as well as moderating lab hours; some semesters, this was done using faculty load credit, and others a student worker was paid.
- **Faculty/student training** – each semester, faculty need training on the technology and any updates. This was the largest and most challenging part of sustaining the trading room and ensuring its ongoing use.
- **Lab hours** – this is time carved out of the regular classroom scheduled use of the trading room; it would give students access to technology outside of their scheduled class so they could complete assignments.

In some ways, we were in a good place because our university provided the basic ICT infrastructure and all we needed to do was extend that infrastructure to create a trading room (i.e., retrofit a classroom with network drops and other infrastructure). However, much of what we wanted to do required large resource investments and annual funding for subscriptions and technologies. We quickly discovered the following:

- 1) Some of the required ICT infrastructure already was provided by our university, but we lacked the specialized data feeds, hardware, and software necessary to build a trading room.
- 2) We recently had moved into a new classroom building that was outfitted with current ICT infrastructure, and several of the classrooms were “smart classrooms” equipped with computerized teaching stations and student computer terminals. This provided a good platform upon which to build a trading room.
- 3) There was no space for the necessary servers, but through negotiations with our administration, we were able to share space with the university's IT department.
- 4) We had the necessary furniture; the selected classroom had the student tables arranged on tiered steps in a U-shape, leaving the floor available for new workstations that supported financial analysis.
- 5) Our university provides a robust set of desktop productivity software on student and teacher computers and had Internet connections as part of the smart room.
- 6) The finance department had several software packages for Monte Carlo simulations and Portfolio Analysis. This software was moved to the new trading room.

- 7) There were interested staff and faculty. Information Technology Support staff and several finance faculty members were willing to work on a team to research trading rooms.

Taken together, the above meant that we lacked the resources to create an entire trading room at one time. We had to use an ad hoc approach (e.g., a resource-centered approach), rather than a strategic approach (e.g., contingency-centered approach) to this project. This ad hoc approach did not include annual funding for operation of the trading room. Several of the facilities visited by faculty had been established with significant donations from corporate sponsors and were designed/built as integrated projects. Our trading room was (and still is) incrementally built and funded as resources became available. Due to the nature of funding at our university, this allowed us to build the trading room, but we still face problems of ongoing annual funding.

At the start of our trading room project, we developed a list of our real needs, in terms of both teaching and public relations. We got rough estimates of the costs of each item and, most importantly when the dean, the administration, or an outside group (such as our Alumni Association) expressed an interest in supporting our project, we could immediately suggest one of our needs, e.g., a Bloomberg terminal, and its expected cost. Our initial list included:

- Dual monitor Bloomberg terminals
- Compustat database
- Plasma TVs and World Time clocks
- Streaming electronic ticker
- Glass wall to allow visitors to observe the Trading Room
- Electronic data board(s)

Since Bloomberg is the standard in the industry, we believed that our students should have experience with it. Most of the colleges we visited had multiple Bloomberg terminals. A room full of Bloomberg terminals was too expensive for us. Over the years, since the inception of the trading room, we have had various levels of funding, which mean that the trading room has had ups and downs, with Bloomberg terminals and other databases being funded some years and not others. This has clearly shown us the need to align IT with business school strategy, and with the budgetary processes at our university. In our setting, we learned the following from this experience:

(1) Small, incremental visible additions attract funding; (2) Get ready! Do your homework and have a plan; (3) Be flexible.

Our first years were successful and we learned much that we could do for the future. The room is scheduled for finance classes 75% of the time. The rest of the time is available for lab hours or classes from other disciplines. We also quickly learned that faculty must share the trading room, swapping locations between classes when one class needs the technologies in the trading room and another doesn't.

3.2 LAB COORDINATOR

For a trading room to operate successfully, a lab coordinator is needed to oversee its smooth functioning. Ideally, this person would be in charge of both the administration of hardware/software needs as well as the education of faculty and staff. Since the ultimate goal of the trading room is to enhance student learning, it is important to have a coordinator who understands the educational impact on the students and how to help faculty integrate the trading room into their classes. Many administrative tasks need to be coordinated, including installation and maintenance of equipment and software, renewal and updating of software and data feeds, approval of purchase contracts, etc. These nuts-and-bolts tasks are essential to ensuring that the trading room continues to operate effectively so that it will be ready when needed. The other major responsibility of the lab coordinator is to help faculty and students understand the trading room's capabilities. The lab coordinator should work with the faculty to investigate which technologies are needed and most useful.

3.3 FACULTY AND STUDENT TRAINING

Faculty and students need to know the capabilities of the trading room and how these technologies will help them. The faculty are the primary teachers of the technology to the students. However, for faculty to do this effectively, they need to know how to use the technology themselves. Ideally, several faculty members should be trained on all technologies at all times. There is always a shortage of faculty time to devote to training and we continually strive to get an early start on training each academic year.

When we can get faculty to partake of training, we have had very good results. We encourage faculty who were trained to offer the demonstration to their classes and hope they will make time for this when planning their course syllabi. While it is expensive in terms of time and resources, we schedule workshops for faculty at the start of our academic year so they will be prepared for the rest of the year. During this training, we update faculty on changes that have occurred in the trading room, and provide refresher training on all technologies.

3.4 SECURITY AND ACCESSIBILITY FOR THE TRADING ROOM FACILITY

Security versus accessibility has been an issue. In theory, whenever classes are not assigned to the trading room, it should be available for use. However, because of university policies the trading room needs to be secured unless a faculty or staff member is present. This requires a lab manager or lab coordinator to monitor the trading room when it is open outside of class time. At several schools which we visited, there is a significant budget for training and monitoring. Some schools provided monitoring using graduate students. Our current plan is to (1) give a faculty member load credit to oversee and monitor the room, (2) hire a student worker to provide monitoring, and/or (3) have faculty members hold their office hours in the trading room when they coincide with times that the room is free.

3.5 SUBSCRIPTIONS AND DATABASES

Ongoing costs are significant. Subscriptions are needed for the information on the stock ticker and data boards. Software, analytical terminals, and other technologies are necessary for faculty to create an appropriate and supportive learning environment for students. Financial databases (e.g., Compustat, Datastream), analytical terminals (e.g., Bloomberg), and stock trading simulations (e.g., FTS, StockTrak) were all options we considered; some were actually incorporated into our trading room at various times based on available funding. The annual costs for these technologies are significant, and we were never certain if we would have ongoing funding. This uncertainty had a negative effect on how willing students and faculty were to spend time to learn the software. At times, funds were not available to renew contracts for technologies in the trading room; in those cases, less expensive options that approximated the same functionality were implemented. We have had success in garnering resources from our administration when we used stock trading software in our Investments, Securities Analysis, and Derivatives classes, as well as for a school-wide portfolio competition.

3.6 Our Status Today

Soon after launching our trading room project, we learned that resources to renew our subscriptions annually would be scarce. The trading room project was launched in an environment of significant budgetary constraints and we were soon aware that we would not be able to provide a fully operational resource "out of the box." We had no alternative but to accept an incremental approach in which we initially would offer students a trading room experience with significant limitations. But we felt that we could provide many of the essential elements of a trading room and that this would give students meaningful exposure to these technologies, and that this exposure would generate the enthusiasm and momentum that would support continuing enhancements. It was our hope and expectation that this process would eventually lead us to the fully featured trading room we envisioned. To some extent, our experience with offering "half a loaf" did support our initial optimism. Many students and faculty embraced the resources we were able to offer. Exposure to systems central to the modern financial services industry, such as Bloomberg terminals, was clearly exciting and inspirational to many. The familiarity with technology and systems that even our limited trading room provided has helped prepare students for financial services careers.

Still, we have not been able to obtain the funding needed to move the trading room project to where we would like it to be. These constraints have forced significant compromises, and these compromises have led to some frustrations and unmet expectations that have sapped the project of the momentum we had hoped would move it forward. One illustration of this has been the repeated changes of financial data providers and trading simulation software. These changes were necessitated by resource availability and the fact that our trading room has never been considered as part of the annual budget cycle at our university – we are in a "catch as catch can" environment. The result of these changes has been that faculty and students have had to learn new technologies. This caused a reluctance to make further time investments in learning systems that may not be present in future years. The major lesson learned: going forward, the trading room needs to be part of the annual university budget cycle so that we can plan for the future.

Our experience suggest the desirability of offering the complete trading room operation at the outset, if funding permits, though in similar environments of funding constraints this may be a lesson of limited applicability. The more difficult question is whether it is worth the effort to offer some components of a complex technology offering, such as we have in our trading room project, with the awareness that the desired end result may not be achievable. Despite some disappointments, we feel that the trading room project has provided significant value to our students, justifying the commitment we have made, but this is a determination each department will have to make on its own.

4 LESSONS LEARNED FROM OUR INCREMENTAL APPROACH

Our trading room technologies were combined with other university resources to achieve SAIT in a resource-centered approach. This was in line with the resource perspective to maximize technology; however, it was not in line with the contingency perspective whereby ICT resource expenditures were based on strategic goals. The resource perspective works in many universities, but we have come to believe that taking the contingency view – in which the trading room is believed to add value when it is planned to support a strategic objectives – works best. The trading room needs annual budgetary support that is best gained through including the required ICT expenditures in the budgetary process. In our experience, the contingency perspective better assists with the alignment of ICT resource expenditures and strategic goals. Said differently, building a trading room and obtaining ongoing resources to support annual expenditures are best accomplished when the trading room is built to support the strategic goals and objectives of the university and business school. Strategic thinking and alignment of ICT are very broad and concerned with why technology is implemented and what it will accomplish. Tactical thinking is operational and concerned with how the technology will be used on a day-to-day basis (Haines 2011). We have found that both strategic and tactical thinking are crucial for the success of a trading room. Thus, we recommend the following strategic and tactical approaches to ensure the success of a trading room:

- a. **Goals and Objectives:** Understand your university and school's strategic goals and objectives, and how a trading room fulfills them. Create your plan and proposed budget for the trading room around these goals and objectives as that will increase the likelihood that you will get initial and ongoing annual support.
- b. **Project Champions:** It is important that project champions are identified early. Faculty and staff who will support the building of the trading room and want to work to create a positive impact on student learning need to be brought into this project early.
- c. **Levers:** Identify the levers that must “go right” so the trading room will be successful. This may be administrative support, external funding, job placement statistics, etc.
- d. **Measurement:** Develop measurement plans to monitor the impact of the trading room.
- e. **Vision:** Develop a vision for the trading room. Know what you want to build, and develop a list of preferred vendors and technologies.
- f. **Practices and Culture:** Incorporate the trading room into the educational, pedagogical, and administrative practices/culture of your school. Also, make sure it is geared toward the type of students you serve.
- g. **Potential Employers:** Gather input from potential employers. Let these employers tell you the skills and technologies that will make your graduates more competitive in the employment marketplace.
- h. **Curriculum:** Thoroughly analyze your curriculum to determine places the trading room can support instruction. Determine if your lower-division classes can adapt easily to teaching introductory skills using the trading room technologies, or your upper-division classes can adapt to teaching more advanced skills. Look for places in your curriculum where the trading room could be used.
- i. **Training:** Develop a plan to train faculty and students each semester, especially if the technologies are apt to change. Training is one the biggest determinants of successful faculty adoption of the technologies in the trading room.

- j. **Lab Coordinator:** A lab coordinator is necessary for the success of a trading room – and that coordinator must be an expert in the technologies of the trading room. It is essential to have someone who keeps the technology running efficiently, and holds regular office/lab hours. Such hours give faculty time when they can use the technologies for class preparation and the lab coordinator as a resource. Those same hours give students time to work on class assignments.
- k. **Vendor Support:** Many vendors offer training and support. These services can be vital to the sustainability of a trading room. Consult with vendors early, and possibly make the selection of vendors contingent upon their providing necessary training and support.
- l. **Software Location:** Some software licenses will allow you to install software only in the location being used (i.e., trading room); however, other licenses will allow software to be installed in the location being used and in faculty offices. Other licenses are for cloud-based applications that can be used from anywhere. The more accessible technologies are, the more apt it will be used.
- m. **Space Considerations:** Will your university dedicate space to a trading room? This is paramount to the success of a trading room project. Size, number of seats, available times for the room to be used (e.g., are there times for lab hours? do you need to share the room with other classes?), accessibility, and security issues all should be considered.

As a school considers whether to build a trading room, a few questions must be answered:

- How does building a trading room align with the school’s overall strategic plan?
- How does a trading room add value for students and other stakeholders?
- How and why is a trading room being built?
- How does the expenditure of those ICT resources enhance learning?
- Will the trading room enhance the stature of the school?
- Will there be annual budget funds for the trading room so it is sustainable?

5 SUMMARY

The alignment of strategy and technology takes a concerted effort. That is true for any technology implementation, including a trading room in a business school. We look at crafting a technology strategy from two perspectives – the resource-centered perspective in which ICT resources are used in alignment with other strategic resources, and the contingency perspective which states that ICT resources add little value unless they are planned to support an organization’s main strategic objectives. This paper proposes that the contingency approach is the most advantageous way to build a trading room, and discussed how ICT resources can be deployed to align with an organization’s strategy when building a trading room.

At our business school, we needed to start our trading room project using an organic resource-centered approach. This meant that we seized any resources that became available and incrementally built our trading room. This often left us unfunded, so that each year we had to vie with other projects to gain funding for trading room technologies. It would have been much more desirable to plan for and have trading room expenses built in to the annual operational budget of our school. However, a number of factors prevented that, including the economic downturn of the last several years and the administrative milieu that we function in at our university. It is our recommendation that any trading room project ensure upfront that it has the administrative and resource support necessary for the long haul.

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