

# A STRATEGY FOR E-COMMERCE AT FLORIDA COMMUNITY COLLEGE

## *Applying Cyber Tools for Competitive Advantage and Student Success*

*Robert J. (Rob) Rennie, Ph.D.*

*Vice President, Technology  
& Chief Information Officer*

**Purpose:** The primary purpose of this paper is to introduce a strategy for the employment of e-commerce technologies (and other cyber tools) designed to ensure the continued success of Florida Community College in the higher education marketplace of the new millennium. Further, it is intended to enhance understanding of the ever more competitive nature of the higher education market. A market that is dynamic and characterized by the issues of changing student interests and requirements, increasing demands for improved customer service, and the infusion of new service and business models.

**Perspective:** We find ourselves in the midst of what MIT's Lester Thurow has termed the Brainpower Era. This is fortunate for many reasons, not the least of which is the Internet, the web, cyberspace, the net, *it*. And *it* is all around us. The cyber age is here and many organizations are applying this age's trademarked tools and processes for competitive advantage in their markets.

The web has developed into a predominant venue for the transaction of business and the business of transactions. This development is neither regional nor national, it is not bounded by industry type or level of capitalization. It is a pervasive movement to new economic and business models. It has mass and velocity and, most importantly, it has relevance. For example, Internet-based sales are expected to grow (from the current \$2.0 billion to \$32.6 billion) as much as 1,500% over the next three years in Asia alone.

Estimates are that over 179 million people currently access the web and that there are over 45 million unique visitors to the web each week, 81% of whom are between the ages of 18 and 49 years. These facts clearly demonstrate a growing global market that is web-based and which is composed of higher education's target demographic group, this can not be ignored.

In his latest book, Business at the Speed of Thought, Bill Gates describes the nature of this era by contrasting its characteristics with those of previous eras. He states "Previous economic eras were marked by long periods of stability followed by short periods of wrenching change, a concept known to evolutionists (and biologists) as punctuated equilibrium." Gates goes on to describe the current environment as an "era of punctuated chaos" where the pace of change is unsettling and constant upheaval is visited with only brief respites.

All of the change, turmoil, evolving markets, dynamic customer base, and technological innovation create tremendous opportunities for organizations and individuals to redefine themselves. But it also converges on individuals who must live, learn, and work in an ever-changing, uncertain world. Colleges, particularly community colleges, are society's enabling

agents for these individuals as they try to survive and succeed in this challenging environment.

To be successful, individuals, now more than ever, must be educated, trained, skilled, and otherwise prepared to deal with the characteristics of the new economy and their place in it. Waterman, Waterman, and Collard defined these qualities as "career resilience." They suggest that "successful employees will be those who are dedicated to continuous learning and ready to reinvent themselves to keep pace with change." Futurist Ray Kurzweil has predicted "(in) 2019 most adult human workers (will) spend the **majority** of their time acquiring new skills and knowledge."

In composite, the characteristics of the new era, availability of enabling tools, requirements for personal success, and the shining example of leading organizations render some reasonable conclusions. These are not so much absolute fact but form more of a scientia media of what will occur. Of these conclusions, four have particular relevance to colleges.

1. Everyone will have access to the Internet. Ubiquity will be realized because it is great for business. Issues of physical presence and proximity will be moot.
2. Virtually all workers will be forced to go back to school periodically for re-skilling. Technology and resultant business skills will change fast and often.
3. The rapid pace of change will continue while expectations of time-efficient "when I want it," convenient access to services will become the norm as web-based transactions grow.
4. Choice-of-provider (college, vendor, etc.) market conditions will force colleges to provide high quality product at competitive prices with exceptional customer service or they will (and should) fail.

These four postulates of the predicted and near certain future create an imperative for change, a demand for a new model of service provision. Unfortunately, many institutions lack the requisite vision, willingness, awareness, and/or resources to take advantage of this opportunity and guarantee themselves a successful future in the new millennium.

Florida Community College is not, nor will it become, one of these institutions. Rather it will implement effective strategies for implementing e-commerce-based processes and services.

**Three Traps:** There are many reasons for organizations to fail in the new economy. For higher education there are three critical traps that constitute what might be termed a nature to fail.

First among these traps is what Szent-Gyorgi refers to as syntropy, a drive towards greater order. Although those of us in higher education often profess ourselves, and sometimes are, unencumbered by a sense for order and able to embrace chaotic systems, our collective selves, in the form of institutions seek order. As organizations we like things neat, clean, precise, and in knowable measures. The problem though is that this is completely incompatible with the web and the models that result from it. John Kao has said "the Internet culture is a jamming (as in jazz) culture, it is nonhierarchical and center-less."

In The Minding Organization, Rubenstein and Firstenberg point out that "the Internet forces us to rethink what is necessary to make a system work." They go on to describe Hardin's concept of an ecocatastrophe filter, the premise of which is that organizations (organisms) never just do one thing because everything is connected to everything else, therefore the entire effect must be assessed (filtered).

Failure to apply this filter has resulted in a long history of unintended consequences that have caused a need for greater order and a commitment to the status quo. The fear of unintended consequences and the perceived pain of change paralyze organizations and results in missed opportunities and ultimately failure.

Trap two, colleges tend to be risk-averse. Adopting extreme new technologies, particularly disruptive technologies, is perceived as a high risk venture. Many cyber tools and processes are, in fact, disruptive technologies. They are considered disruptive in that the value they provide is not a discrete factor within systemized measures that are recognizable and accepted in the existing industry model.

For example, high touch has been a core value in many colleges. Consequently, a large number of measures have been developed to assess the level of service provided in terms of personal, face-to-face interactions with students. Web-based initiatives will not fare well under such measures even though students may receive higher levels of convenient service.

But still, we as organizations like our known measures, we use them for accreditation, funding, and justifying our very being. Disruptive technologies will never look successful under old measures. This makes it extremely difficult for innovators to risk even though the rewards can be extraordinary.

Harvard's Clayton Christensen found that firms that led in launching disruptive technologies (products and services) logged revenues twenty times greater than those that entered markets later. This should be instructive for colleges as well as businesses. Still, colleges rarely risk.

The third major trap that leads to colleges' nature to fail is what Guy Kawasaki calls Death Magnet #9. Death magnets are Kawasaki's principal causes for business failure. He introduces them in his book Rules for Revolutionaries. Death magnet #9 is entitled "*Our Product Sucks Less*." It is defined as deluding oneself by comparing current products and services to prior offerings and those of competitors. This, says Kawasaki, "results in the feasible solution being the optimum and prevents the optimum solution from being feasible."

Colleges constantly compare themselves to themselves and each other. This is inherently success-avoidance behavior, especially when done without a clear vision for achieving excellence beyond the known, the experienced, and the so-called tried-and-true. Colleges can compare and measure themselves right into mediocrity and insignificance in the new millennium.

Syntropy, risk-aversion, and death magnet #9 are part of our organizational nature. They are also three great reasons to fail. To be successful, colleges must avoid their natural instincts and push themselves into the unknown of new technologies and new ways of conducting the business of higher education.

***Initiatives Based Planning: Empowerment for E-commerce:*** One way to increase the chances for success in e-commerce initiatives is to empower the individuals in an organization to pioneer. Ideally, an organization's e-strategy would be compatible with its business plan. Current planning and budgeting models, though, often make it difficult to foster the creativity that results in successful e-commerce innovations. The Internet, the web, and related technologies are network models. As such their principles and characteristics are more like biological systems than linear models by which businesses (and colleges) have historically been defined.

Typically, colleges have a business plan that lives in the form of an educational master plan. This master plan is usually complemented by a series of subordinate plans for facilities, technology, and budget. Organizations work very hard to produce volumes of paper detailing the findings of environmental scans and the history that has served as the basis for the budget (and usually why it should stay roughly the same as it has always been). In fall 1998, Florida Community College, to begin to shed itself of this out-of-date ineffective practice, moved from classic master planning to an initiatives based model.

This highly autonomous, empowerment rich model encourages and funds pioneering. It provides for the development of many programs, systems, and processes at any level in the organization. Potential value is assessed relative to the College's global direction rather than on the basis of predetermined objectives or outcomes. Most importantly, though, it provides funding outside of the budget process. In this model, anyone's good idea has a chance to succeed.

This strong support for innovation and creativity is a necessary element in the development of e-commerce initiatives. One good idea can reshape the future of an organization. Empowered people think.

***Technology Rich Environment: The Enablement Model:*** Implementing an effective strategy for e-commerce requires a compatible strategy for the deployment of supporting technologies. In a network model, ubiquitous access to technology creates value. At Florida Community College ubiquitous access is achieved through a technology enablement model.

In the classic technology plan, resources are allocated for specific priority programs that demonstrate need and fit within budget. They usually are three to five year rolling plans as once recommended by this author. It usually goes like this. Goal A (from the master plan) is to be achieved through specific tasks 1, 2, and 3. Each task is claimed to have a requirement for staff, facilities, non-labor cash, and technology resources of a given amount. If Goal A and its tasks are declared to be of sufficiently high priority to make the cut on budget, the resources flow and the work is begun. Problem is, this is slow, very political, and ignores the fact that stuff just happens. That is, people who have access to tools figure out really creative and valuable ways to use them. This is the real value of technology, it empowers the creativity of individuals. Hence, the enablement model.

In its simplest form, the technology enablement model puts the best possible technology that an organization can afford in the hands of its workforce. It then provides training, support, and connectivity and lets value be created by its use.

***An Agile Architecture: Multiple Platforms:*** William Graves, in Katz and Associates' *Dancing with the Devil*, stated a philosophy of information technology (I.T.) and its mission in a college. He said, "I.T. is a strategic asset that should be utilized by the entire faculty, staff, and student body to increase the productivity of mission-critical academic programs and the administrative services that support those programs."

Consistent with this statement of mission and purpose and through implementation of the technology enablement model I.T., at Florida Community College, operates under a broad mandate to create a powerful, ubiquitous, highly reliable technological environment. This mandate is framed by values that are expressed through statements of mission, vision, and charge.

***Mission:*** The mission of the technology team is to provide high quality technological resources to the College which support achievement of the College's mission, vision, goals, and objectives.

***Vision:*** Florida Community College will be viewed as a technological leader providing superior access to the resources of scholarship and workforce preparation through the application of advanced technologies.

***Charge:*** The technology team at Florida Community College will pursue every technological advancement of promise for the improvement of the education process, engage in continuous improvement of quality of services provided to clients and conduct business in a collaborative and instructionally-focused manner.

The convergence of the forces of a competitive market, rapidly changing technology, and the economics of higher education forms an environment in which this mandate can only be met through a flexible, multiple platform architecture. The College's technology architecture is based on the deployment of three primary enterprise platforms. These are; Sun enterprise server, IBM enterprise system 390, and clustered Windows NT servers.

Each platform has a core function. The Sun platform hosts instructional e-commerce initiatives and the student success system currently under development known as *Artemis*. The IBM System 390 (CMOS based mainframe) serves as host for all enterprise-wide business and student support applications. Clustered NT servers host content and groupware applications.

Between these three platforms are leading edge storage and tape subsystems that are shared and reconfigurable for each platform based on demand. Extending from this core configuration is an extensive 100mbs wide area network (WAN) and many 10/100mbs ethernet local area networks (LANS). These networks provide connectivity for every space on every campus and center. The over 4,000 workstations connected to these networks are state-of-the-art machines on a three year (minimum) replacement cycle.

This robust, yet flexible architecture creates a platform for successful technology initiatives. It also serves as a model for the development of organizational agility in other areas of the College.

***E-commerce: A Strategy for Success:*** The development of an e-commerce strategy is what VanGundy would classify as an ill-structured problem. It is ill-structured in that there

is little available information to assist in closing the gap between what is and what should be. Due to the absence of a dependable model for strategy development in this new and challenging (ill-structured) area, a new model called *spatial planning* was created. Spatial planning is based on the development of focus areas called [planes](#) and initiatives known as *vectors*, these are formed to pursue one or more global directions or [points of emphasis](#) (see [Spatial Planning Concepts and Terms](#), (attachment 1).

The College's spatial planning-based e-commerce strategy is implemented through the development of specific technology [planes](#) and their related [vectors](#). Each [plane](#) represents a component of the overall strategy that is consistent with the ten points of emphasis described below. The college's student success web-site project would be considered a [plane](#) in this model. [Vectors](#), on the other hand, are specific discrete deliverables. Web-registration and the implementation of course syllabi on line, for example, are [vectors](#) within the student success plane.

The [Planes and Vectors Relationship Matrix](#) (attachment 2), shows the College's current major e-strategy [planes](#) and their corresponding [vectors](#). It should be noted that it is common for [vectors](#) to cross multiple [planes](#). This is a dynamic model that evolves quickly often resulting in the rapid creation and/or deletion of [vectors](#), the completion of [vectors](#) and significant changes in levels of priority. Many [vectors](#) are, in fact, collegewide initiatives that have been developed as part of the College's strategic planning process, others are operational or technical in nature and are not identified elsewhere in the College's planning processes. The relative importance (read priority) of [vectors](#) can not be assumed simply by their status as an initiative as many technical and operational elements serve as the foundation for college-wide initiatives.

Although the e-commerce strategy (and the [plane](#) and [vector](#) planning model) being employed at Florida Community College is comprehensive and technologically complex it can be fairly well understood in terms of its ten basic points of emphasis. They are:

1. Individualized web pages as the primary interface, a *myfccj.com* concept
2. Knowledge management-driven Internet marketing, targeted market space, unique brand identification, placement, and global recognition in selected markets
3. Trading communities and e-villages established through extranet relationships
4. The new *Artemis* system as the key driver of all systems development
5. Lifetime access for members of the college community
6. Process management used to redesign systems and services, seamless change
7. Weather report MIS as part of individualized interface
8. Creation of on-line learning communities that bundle all tools for success
9. E-based instructional design and delivery
10. Instructional programs that prepare students for success in an e-driven world.

This ten point strategy will provide Florida Community College and its constituents with a first-class web presence, tools for individual success, and establish the college as a leader for the Internet age.

**Summary:** The dynamic marketplace and ever-changing technological world in which we live results in significant challenges and a critical need for colleges to develop effective strategies for survival in their environment. With these challenges, though, are tremendous opportunities. Florida Community College has developed and is implementing a comprehensive strategy that includes new collegewide and technology planning models, a robust multi-platform architecture, and a ten point strategy specific to e-commerce initiatives.

These are exciting and challenging times in higher education. Through well conceived and precisely executed e-commerce strategies colleges can gain competitive advantage and leverage new technology to help their students achieve distinctive success in the global information age.

## **SPATIAL PLANNING CONCEPTS AND TERMS:** **ABBREVIATED GLOSSARY**

### **Action Space**

The immediate operational areas of vectors. Zone in which collateral effects are of greatest concern.

### **Amplitude**

Vector "thickness," a measure of relative effort or resource consumption.

### **Attitude**

Inclination (declination) of a plane, the reference being to a designated horizon.

### **Direction**

Applied angle relative to overall college and/or plane direction where  $360^{\circ}/0^{\circ}$  would be parallel,  $270^{\circ}/90^{\circ}$  would be perpendicular, and  $180^{\circ}$  would be opposite the targeted direction. These apply to plane's relativity to college goals, and vectors relative to planes.

### **Distance**

Scale of 1 to 10 where 10 equals 100% completion of a vector. This applies to subvectors and vectors.

### **Planes**

"Focus areas," contain related vectors, often are goals, broad platform.

## **Points of Emphasis**

Strategy statements, framing concepts that guide planes and vectors.

## **Sphere**

Organization's conceptual realm of operation/effect. Three dimensional arena in which spatial planning within an organization occurs.

## **Stars**

Navigation points, relative references, benchmarks, etc., by which direction, distance, and attitude are determined.

## **Universe**

The greater arena, the organization's marketplace/marketspace.

## **Vectors**

Specific deliverables, precise projects similar to tasks, may be initiatives.