Disruptive Innovation and the Community College

Rufus Glasper and Gerardo E. de los Santos, Editors

League for Innovation in the Community College

The League for Innovation in the Community College is an international organization dedicated to catalyzing the community college movement. The League hosts conferences and institutes, develops Web resources, conducts research, produces publications, provides services, and leads projects and initiatives with more than 750 member colleges, 160 corporate partners, and a host of other government and nonprofit agencies in a continuing effort to make a positive difference for students and communities. Information about the League and its activities is available at www.league.org.

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Publications
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This publication is available in digital form at www.league.org/publication/whitepapers.

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Innovation and the Community College

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Innovation has long been associated with the community college movement, which itself has been called the greatest innovation in American higher education. Numerous books and monographs have been written about innovation in the community college, and studies of community college innovation pepper the literature of the past 50 years. In this monograph, we acknowledge the history and tradition of innovation in the community college and invite readers to explore with us the possibility and potential of a different kind of innovation: We ask our colleagues to consider the role of *disruptive innovation* in the community college enterprise.

Clayton Christensen, the leading developer of the theory of disruptive innovation, explains that the phrase "describes a process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up market, eventually displacing established competitors" (www.claytonchristensen.com/key-concepts/), and he includes community colleges on his list of disruptive innovations. Although community colleges have not replaced traditional 4-year institutions, they now enroll half of the undergraduate student population. With a longstanding focus on access, community colleges have opened higher education to a less affluent demographic by making college-going opportunities local, affordable, and attainable.

In preparing for this monograph, we broke down the definition of disruptive innovation into several parts, noting that disruptive innovation is

- *a process by which a sector (such as higher education)*
  - that served only a limited few
  - with complicated products and services
  - that were expensive and inaccessible
- *is transformed into one (such as the community college)*
  - that offers products and services
  - that are simple, affordable, and convenient,
  - and serves many, no matter their wealth and expertise.

Mario Martinez, in the chapter that follows, describes various types of innovation in detail. Here, we define it only briefly, with a note that disruptive innovation is extraordinary and ultimately far-reaching; it is singularly distinctive and, at least initially, not replicated in its approach to solving a problem or meeting a need.

Community College Innovation in Context

Throughout its 45-year history, the League for Innovation in the Community College (League) has championed innovation in the institutions it serves. Founded

in 1968 by B. Lamar Johnson and a handful of two-year college presidents across the United States, the League grew out of Johnson's work, *Islands of Innovation*. Writing about "junior colleges" in this brief report, he notes that there is "significantly less experimentation than would be expected, or certainly hoped for, in an institution which is often referred to as 'the most dynamic unit of American education.'" He continues: "Within a sizeable number of junior colleges are found departments or individual staff members who are trying out new ideas, frequently at their own initiative and on their own responsibility." (p. 13) Johnson calls these outliers "islands of innovation," the phrase that became the title of his report.

In a 1969 report on a larger survey, *Islands of Innovation Expanding*, Johnson points out, "a lag in innovation and experimentation" in these institutions: "Despite its youth and its potential for leadership in this area, the junior college, along with other units of American education, has been resistant to change." (Johnson, 1969, p. 45). Later studies of innovation in community colleges have found that innovation ebbs and flows. In *Innovation in the Community College*, O'Banion (1989) explains that although the 1960s were a period of abundant "energy" and innovation, economic and political circumstances of the 1970s and 1980s led to a decline in community college innovation, and he describes a "renaissance of innovation" at the end of the 1980s (p. 10). The following decade saw the explosion of the Internet and World Wide Web, and new technologies supported and contributed to innovations in teaching and learning, student support services, and administrative functions. Well into the first decade of the 21st century, stakeholder demands for accountability, including calls for clearly stated learning outcomes and meaningful assessment of student achievement, spawned innovations in the classroom and across the institution.

In 2010, O'Banion served as the lead researcher on a League project, *The Nature of Innovation in the Community College*, examining award-winning innovations and innovators from the previous decade. Given the sporadic history of innovation in the community college, the research team focused part of the study on the sustainability of innovation. They found that, "Efforts to sustain the innovations are generally sound" and are exemplified through (a) commitment of staff time and responsibility; (b) expansion of the innovation to serve faculty, staff, and students "beyond those for which the innovation was originally designed"; and (c) support for the innovation "in the budget and organizational structures" (League, 2010, p. 20). While sound, these efforts were not ubiquitous, and although regular evaluation of an innovation's effectiveness and impact contributes to sustainability, the study found:

> "Unfortunately, it is business as usual for these innovators when it comes to evaluation…. [W]hen respondents were asked "How do you know?" about the impact of the innovations, 58.9 percent relied
> on faculty/staff testimonies or anecdotes, followed closely by 52.1 percent who relied on student testimonies or anecdotes" (Noi, p 19).

Although some community college innovations are institutionalized and become part of the routine practice and culture of the institution, many promising and

proven innovations leave little lasting evidence of their impact or effectiveness. When a champion moves on, budget cuts limit support for new ventures, or the political climate inhibits risk taking, even the most effective innovations can be thwarted.

Almost 50 years after B. Lamar Johnson's report, community colleges still seem to generate islands of innovation, individual or small-group efforts that rarely impact the entire institution, much less disrupt the higher education field. In many institutions, innovation is often the result of individuals who have an idea and commit to putting it into practice. Given this innovation reality, discussing disruptive innovation in the community college context may be perceived as lofty or overreaching, but we take a different view. Widespread movements such as the Learning College, Student Success Agenda, and, more recently, the Completion Agenda may have the potential, over time and perhaps in concert with each other, to evolve into disruptive innovation. We posit that for some community colleges with deep, long-term commitments to one or more of these movements, implementation of policies and practices based on their tenets has already been transformational.

Disruptive Innovation: Questions and More Questions

As a business model for privately owned companies or publicly traded corporations, disruptive innovation was not designed specifically for publicly funded educational institutions. Before applying the model to community colleges, leaders of these institutions would be prudent to ask pointed questions about its applicability to our situation:

- What adaptations must be made for the appropriate application of the disruptive innovation business model to community colleges?
- What considerations must be made to ensure that these adaptations are necessary, given the distinctions between private and public sectors, rather than convenient measures for avoiding difficult issues?
- If the community college itself is a disruptive innovation in process, what place, if any, does disruptive innovation have *within* the institution?

With this publication, we invite community college leaders to join the conversation, to grapple with these questions and to explore, with a thoughtfulness that extends beyond personal practical experience, areas in our institutions that may be in need of disruption. For example, where and how might disruptive innovation begin in community colleges? How might the *complex and exclusive* become *straightforward and ubiquitous*? What implications might disruptive innovation have for our field, for the students and communities we serve, and for the world beyond? What innovations might we consider, and possibly pursue, to overcome complex challenges associated with areas such as accreditation, the completion agenda, student success, state-level governance, economic development, funding, ethics, credentials, holistic learning, and civility, and how might those innovations lead to disruptive innovation?

To help structure the discussion, Mario Martinez provides a conceptual foundation for exploring and understanding innovation in American community colleges, and he introduces a research-based framework for considering the role and impact of innovation in the community college. Two community college leaders, Rufus Glasper and Jackson Sasser, provide case studies for examining specific controversial—and perhaps potentially disruptive—community college innovations. The monograph concludes with a third college leader, Jerry Sue Thornton, considering the potential for disruptive innovation in today's community colleges.

As Martinez points out, there are several types of innovation, and applying the characteristics of disruptive innovation—a private industry model—to community colleges—largely public institutions—is tricky. The exercise can be worthwhile, though, if we open our minds to possibility, adapt the model with integrity, and embrace the opportunity to create new ways of being and of serving.

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A Conceptual Foundation for Understanding Innovation in American Community Colleges

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Community colleges have long been an innovative force within the postsecondary education industry. From the expansion of access to lower division academic subjects to the integration of training and vocational programs (Cohen & Brawer, 2008), the contribution of the community college as a creative and inventive American institution is without question. The recent attention surrounding new technologies, delivery systems, and well-capitalized organizational ventures—all of which have implications for existing institutions and their students—has put the topic of innovation at the top of the community college agenda. The mushrooming attention to innovation has also meant that powerful concepts, such as disruption, have been used to describe technologies, services, organizations, and even college presidents. The heightened interest in innovation, along with its real and potential influence on administrative decision making, suggests the need for a common framework. The goal here is to take a brief step back from the many opinions about how to make innovation happen and present a conceptual framework to assist community college leaders on at least three counts:

1. Understanding the different types of innovation and the likely impact those innovations exert on people, institutions, and society.
2. Viewing examples of innovation in postsecondary education through the framework, including disruptive innovation and its associated criteria.
3. Creating a common and meaningful language that can inform administrative decision making with respect to the possibilities and limitations of different innovations.

The first point, which seeks to classify different types of innovation and the impact they produce, is really the conceptual starting point for understanding innovation. In general, innovations are creative ideas, objects, or technologies that manifest themselves in the form of new products and services, work processes, or even entire organizations. The burgeoning activity in higher education that may fall under this broad definition creates the need for a common framework to help leaders categorize different innovations. Such a framework must be broad enough to capture an array of innovations rather than addressing only one particular type of innovation. A practical framework also can assist leaders who wish to more effectively encourage, manage, plan, or implement innovation-related initiatives in their organizations.

The second aim is to address influential ideas associated with innovation, but within the context of the conceptual framework that anchors the chapter. Disruptive innovation is an example of a popular concept worthy of specific analysis for applicability to higher education. True disruptions are important to identify since their consequences for existing and traditional institutions is potentially devastating, as is powerfully demonstrated in Christensen's (2000) original work on

the disk drive industry. Christensen's path-breaking work also provides criteria that can be applied to postsecondary innovations to determine if they are truly disruptive, and several intriguing examples are passed through this lens for illustrative purposes.

The final goal here is practical in nature, but runs throughout each of the sections: to create a common and meaningful way to talk about innovation. Community college leaders need a common language to communicate effectively with internal and external stakeholders about innovation and the many critical decisions that accompany it, which includes deciding upon resource allocation to establishing project expectations. The conceptual framework discussed here can help leaders develop a common and meaningful vocabulary around innovation, which, in turn, creates a realistic view of different types of innovations and what they may or may not reasonably achieve. Such a view may encourage leaders to take on bold initiatives and projects, but through evidence-based criteria and a perspective that is informed by a grounded, conceptual framework. Importantly, this view also acknowledges that most innovations will not immediately transform a college or the industry, but sometimes it is the small, step-by-step discoveries that make the breakthroughs and disruptions possible.

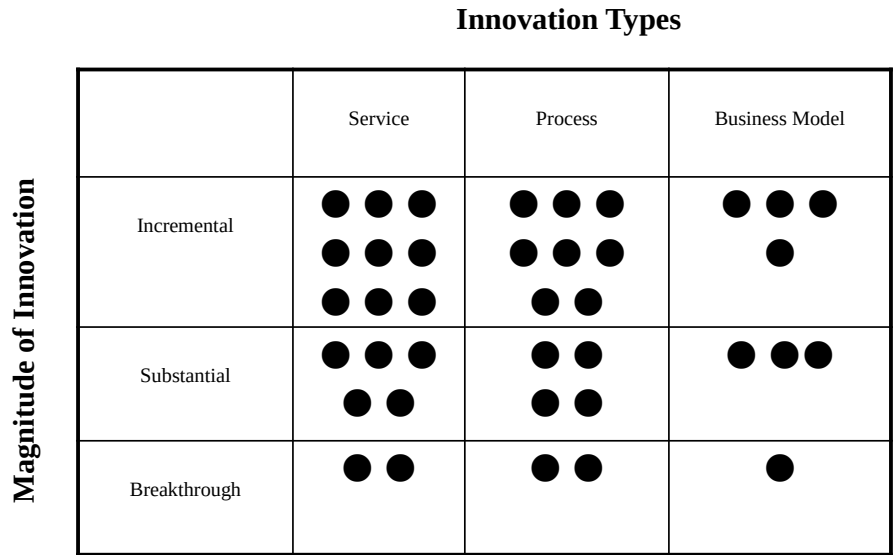
The Innovation Framework

Innovation comes in many forms. Not all innovations transform industries or revolutionize service delivery. In public industries such as postsecondary education, whether for good or ill, it is rare that a new innovation paralyzes existing institutions and puts them out of business. Transformational or disruptive innovations are typically years in the making, usually emerging only because less sensational, incremental innovations preceded them. Thus, there are different types of innovation that result in different degrees of impact on students, community colleges, and our broader society.

Tucker (2008) provides a conceptual framework for looking at different types of innovation relative to what he calls the degree of innovation. Tucker categorizes the degree of innovation as *incremental*, *substantial*, or *breakthrough*, with each exerting a different magnitude of impact. Along with the degree of innovation or the magnitude of its impact, Tucker identifies three types of innovation: *product/service*, *process*, or *strategy*. Silverstein, Samuel, and DeCarlo (2009) prefer to use the term *business model innovation* over strategy innovation, and they add the astute observation that certain types of innovation are more common than others. Business model innovation that is breakthrough is rare, whereas incremental service innovation occurs more frequently. Figure 1 is an adaption and synthesis of Tucker's work and Silverstein, Samuel, and DeCarlo's follow up contributions. The labels describing the two dimensions of the framework have been added and are consistent with the academic literature.

FIGURE 1

An Innovation Framework: Innovation Frequency by Magnitude and Type



The Magnitude of Innovation is the vertical dimension in Figure 1. The three categories follow Tucker's original description, and the Magnitude-of-Innovation label is consistent with the organizational change literature. The magnitude of change is associated with transactional or transformational change. Transactional change, referred to as first-order change, is that which takes place within existing structures and frameworks. This type of change proceeds in small increments over long periods of time (Armenakis & Bedeian, 1999; Burke, 2010; Levy & Merry, 1986). The depth of first-order change is relatively benign within a system, consisting of "minor improvements and adjustments that do not change the system's core, and that occurs as the system naturally grows and develops" (Levy, 1995, p. 103). Transformational, or second-order, change is, "multidimensional, multi-level, qualitative, discontinuous, radical organizational change involving a paradigmatic shift" (Levy & Merry, 1986, p. 5). Transformational change is all encompassing and of a higher-level nature, involving both internal and external environmental pressures which influence leadership, missions, strategies, and values. A separation from past assumptions and beliefs must be made by stakeholders in order to experience a new paradigm or worldview (Kuhn, 1970; Van de Ven & Poole, 1995). Breakthrough innovation is uncommon and aligns with transformational change; incremental innovation is common and aligns with the idea of transactional change.

The Innovation Type is the horizontal dimension in Figure 1, and the category descriptions are a synthesis of ideas from Tucker, Silverstein, et al.: service, process, business model. The literature on innovation and innovation types is widespread and multidisciplinary, ranging from management (Kim & Mauborgne, 2005) and public administration (Berry, 1994) literature to various studies that attempt to derive common characteristics of innovation and diffusion processes

across fields (Rogers, 2003). Service innovation involves the creation of new solutions to old problems, or services that offer new benefits to both the innovating organization and one or more of its stakeholders. Product innovation pertains to tangible goods; service innovation to intangible service delivery. Traditionally, the delivery and consumption of the service occurs at the same time and involves a high degree of human interaction. A grocery store that offers home delivery is a good example of a service innovation that involves real-time interaction between provider and customer. Technological innovation is changing the interactional dynamic, however, particularly in industries like postsecondary education and training.

The remaining innovation types in the Innovation Framework are process and business model innovation. Process innovation enhances or changes the workflow upon which successful product or service delivery rests. Process innovation improves efficiency and productivity. In the case of products or services, process innovation may enable mass production, availability, and distribution. The industrial era's division of labor on the manufacturing line stands as the timeliness example of how process innovation enabled the mass production of automobiles, which then made ownership available to most people. Business model innovation defines new ways of marketing, selling, advertising, distributing, or positioning one's brand. Business model innovation usually emerges because a new strategy is implemented through a new organizational form that is different from what exists in the current industry. Dell's strategy of taking the retailer out of the sales process and mailing a computer directly to a customer is an example of business model innovation, as is the ability to buy and listen to music online through Amazon's cloud player.

Service, process, or business model innovation creates or improves what is commonly referred to as the value proposition. Technology and creative ideas (which may or may not make use of technology) are the source of this improvement. People value quality, price, efficiency, and convenience, for example. Innovations that offer improvements in these areas offer an enhanced value proposition. Innovation is a key lever to enhance the value proposition and may even reconcile two previously competing values such as quality and price (Kim & Mauborgne, 2005). The greater the value proposition, the more successful the innovation.

The Innovation Framework in Figure 1 is simple and predicated on common-sense deductions and broad observation that Tucker brought to light. Silverstein, Samuel, and DeCarlo's (2009) contribution of frequency adds a pragmatic element to the model by highlighting that not every innovation will change society or scale across organizations or industries. A conceptual framework like Figure 1 can, however, serve as an organizing tool to categorize innovations and, therefore, more effectively manage them. Organizing tools also create a starting point and a common vocabulary to describe a given phenomenon, thus lessening the danger of overusing or misapplying popular concepts and terms.

Conceptual frameworks also have limitations. The limitation of Figure 1 is the limitation of most conceptual frameworks: real life is not always so easily

categorized. Actual innovations may be a bit of process and business model combined, or what started out as a perceived breakthrough turns out to be little more than incremental. Given these strengths and weaknesses of conceptual frameworks, the next section offers some examples of how the Innovation Framework might illuminate our understanding of innovation in the community college ecosystem. The third section discusses the popular disruptive innovation concept, examines a few examples of postsecondary innovations through disruptive criteria, and shows how disruption fits into the broader Innovation Framework. The conclusion summarizes what knowledge and understanding of innovation conceptualizations might mean for community college leaders.

Framing Community College Innovation

The Innovation Framework provides a starting point for situating the many innovations that have taken place in the community college sector or that affect it. The magnitude of innovation in the industry has ranged from incremental to breakthrough. Service and process innovation are important to the evolving narrative of the community college sector as is the less frequently occurring business model innovation that also dots the landscape of the industry. Service and process innovations do not draw the attention that business model innovation attracts, but the Innovation Framework reminds us that breakthrough innovation is not confined to business-model type innovation. In addition, over time, what may begin as incremental service or process innovation may transform into breakthrough innovation. Thus, a useful first step is to review some community college-related examples of innovation and associate them with the Innovation Framework. The second step is to consider how specific constructs, such as disruption, do or do not apply to postsecondary innovations.

Business Model Innovation

The history of American higher education unequivocally points to the creation of junior and community colleges as key innovations in the industry. Junior and community colleges were organizational innovations that took place within the broader higher education industry. The community college as an organizational innovation aligns well with the idea of business model innovation. As the two-year sector matures, additional business models such as Rio Salado College—the college without walls—contribute to the sector's ongoing reputation for creativity and innovation.

Business model innovations in the higher education industry have expanded opportunities and provided access to a new and growing market. These business model innovations have made higher education a reality for populations who previously had no options. Within the context of the larger postsecondary industry, however, the birth and maturation of community colleges did not signal the death of four-year institutions as a traditional form of postsecondary education. Four-year institutions have experienced continued enrollment growth over the decades, and the network of stakeholders and actors who comprise the four-year sector has not

vanished from the industry scene. In many ways, community colleges and four-year institutions complement rather than compete with each other.

The dramatic growth in the number and percentage of students who attend two-year institutions is but one indicator of the community college business model's breakthrough impact on American higher education. A single organizational innovation's impact, such as Rio Salado College, may be substantial or breakthrough. For the state of Arizona, Rio Salado College may well be breakthrough; from a larger, national perspective, it is perhaps substantial but with the potential to create a breakthrough impact as the model scales across the country.

Not all business model innovation in the community college world is or needs to be breakthrough or national in scope. Private, not-for-profit and for-profit two-year institutions are part of the two-year sector. The strategic approach of these business models is different than larger, comprehensive public community colleges, and the magnitude of their impact is certainly less. Advocates of the for-profit two-year sector may argue that the impact of these organizations is substantial or breakthrough, while others may reasonably conclude that it is somewhere between incremental and substantial. The small size of the private, not-for-profit two-year sector and its modest enrollment levels suggest an incremental impact. Technical institutes, which have a focused strategy relative to a comprehensive community college, comprise yet another innovative business model in the sector. The presence and importance of technical institutes suggest an impact somewhere between the comprehensive college and the private or for-profit institution—perhaps a substantial impact—though the exact magnitude is subject to debate.

Process Innovation

Process innovation carries various connotations because it is often equated with the manufacturing industry and terms such as reengineering or total quality management. Reengineering, a term popularized by Hammer and Champy (1993) in the early 1990s, has a particularly controversial history. Hammer and Champy advocated that a total makeover of processes within the organization would transform it, but the intense, relatively short-lived attention to reengineering was also accompanied by high-profile cases that failed to live up to expectations. According to Morgan (2006), the failure rates of reengineering efforts occurred because it was based on the faulty assumption that if you get the mechanistic design right, the human factor will fall into place.

Total quality management (TQM) is synonymous with Joseph Juran and Edward Deming, who in the middle of the twentieth century made process improvement a key management tool for improving efficiency and quality within manufacturing environments. Juran and Deming's concepts are actually still very much alive in organizations today, often appearing under different names since TQM as a term is perceived as somewhat antiquated and also associated with high failure rates (Morgan, 2006, p. 91).

Both reengineering and TQM, regardless of their histories, drew important attention to process improvement and, thus, process innovation. Processes remain a critical part of any organization, including community colleges, and attention to process innovation is an important element of organizational viability. The lessons from the history of process innovation also are instructive for community college leaders: Whatever processes are targeted for improvement, it is useful to simultaneously ask how that improvement will align with the perspective of students, faculty, and staff, i.e., the human factor.

Process innovation in postsecondary education conjures images of more efficient financial aid distribution and automated registration processes. Indeed, this is part of the story of process innovation in community colleges, with technology acting as a key enabler. Technology allows colleges to provide student support services faster and cheaper as processes are automated and become more streamlined. Students no longer have to stand in line or speak to a staff member to access transcripts or make a tuition payment, which reduces costs for the institution and increases convenience for students.

Process innovation that increases workflow productivity in student support services is essentially a business process improvement that produces incremental change. The impact is mostly incremental because business process innovation aims to improve efficiency in the delivery of support functions rather than directly addressing a primary goal of community colleges, that of student success, for example. Nonetheless, incremental improvements in support services remain a critical and necessary contribution to institutions, and probably the most common form (high frequency, as shown in Figure 1) of process improvement in higher education. Without incremental innovations, institutions do not provide the improvements that keep them current, competitive, and relevant. Process innovations that yield incremental improvement also assure that students are able to focus on academic success, without having to worry about errors in such areas as aid distribution or tuition payments that may prove to be significant distractions.

The magnitude of a process innovation's impact may reach substantial or breakthrough status if leaders transform system-level processes that address student success. A current example is the effort by community colleges throughout the country to transform the student pathway. Though different models may label the steps in the student pathway differently, the pathway charts a student's journey—his or her process—through college, which covers major steps from connection with and entry into the institution to degree completion. Each step is broken down into a series of components and/or sub-processes that define the college's interaction with the student. Many of these sub-processes, such as registration and course advising, deal with services that directly influence the student's academic progression, as distinct from business transactions with the institution. Common examples include the elimination of late registration and mandatory and intrusive advising during the entry phase. Individual improvements in specific sub-processes, such as registration and advising, remain incremental unless they are tied together with the other steps and sub-processes that define the entire pathway. Efforts to improve the student pathway are systemic in nature, as

each of the steps in the process is tied to others. It is, therefore, coordinated improvement across the entire pathway that will create a substantial or breakthrough impact on student success.

Systemic process innovation is difficult work that takes years to achieve. Leadership changes, faculty concerns, and even student resistance are all challenges that innovation efforts geared toward improving the student pathway face. That is why systemic process-related innovation is rare and does not occur as frequently as incremental business process improvement. Colleges also can learn from the past. Ambitious and well-intentioned efforts at systemic process innovation must avoid the tendency toward mechanistic solutions that fail to consult students and faculty or, at the very least, account for them.

Service Innovation

Service innovation is more aligned with the business of community colleges than product innovation. Service innovation covers a broad range of possibilities and can easily be confused with business model innovation. As viewed through the Innovation Framework, business model innovation primarily describes a development whereby a new organization emerges to deliver a new service or perhaps even an existing service but in new and novel ways. By contrast, service innovation takes place primarily within existing colleges. For example, community colleges have a history of responding to legislative and local needs by developing additional services. Vocational programs, training centers, and departments focusing on continuing education are but a few of the many service innovations that have taken place within community colleges over the years. Community colleges offering baccalaureate degree programs also would fall under the category of service innovation. Any new program or department becomes a substantial innovation if its growth or influence matches or surpasses existing programs. From a service innovation perspective, these same programs would be incremental innovations if they simply complement existing services but remain at the periphery of the institution's core activity. If the service innovation transforms the college and then scales to other institutions, its magnitude of impact may well be breakthrough.

Service innovation may also come in the form of new support services, new course offerings, or new or existing courses offered in new ways (such as online delivery). New support services are commonly designed to meet the needs of an existing or emerging student population. The possibility of college counseling via web chat is one example of how technology makes new services possible. Other examples of service innovation demonstrate that new service offerings are not dependent on technology. The last few years has seen an explosion across campuses in support services geared toward veterans. Veterans still benefit from many traditional student services, but the unique circumstances of returning from war and integrating into a community college environment require that institutions develop new services that account for these cases. The growth in services geared toward student veterans has grown. For veteran students returning to campus, these services may certainly border on the magnitude of substantial and breakthrough;

from a system or campus perspective, such services are very important, but the magnitude of their impact is more accurately described as incremental.

Service innovation in community colleges also includes new course offerings or course delivery of existing or new curriculum. An existing program may update its curriculum from time to time and replace select old courses with new offerings that are more current with the field. The new courses have an important but most likely incremental impact on the program.

Online course offerings are the most recognizable and publicized form of service innovation on campuses today. Colleges across the nation are taking existing classroom courses, and even entire programs, and offering them online. New courses, specifically designed for online delivery, also fit under the service innovation umbrella. Online course offerings create a substantial impact if their growth or influence (revenue generation, for example) matches or surpasses that of existing courses. The impact of online offerings would be more accurately classified as incremental if they simply complement or extend the reach of existing course offerings. It is also possible that, over time, online course offerings for a given program become the norm and not the exception—the incremental impact eventually becomes substantial or possibly breakthrough, depending on the growth and scale of the offering.

Identifying online delivery as a form of service innovation produces less controversy than whether the impact is incremental, substantial, or breakthrough. The controversy over the impact of online innovation, as it pertains to course and program delivery, is largely attributable to the overlapping topic of innovations occurring outside the walls of traditional higher education. Massive open online courses (MOOCs), modular-based lectures (e.g., Kahn Academy), and competency-based credits are examples of innovations that generate tremendous excitement and have given rise to new organizations (business model innovation) that are focused on a single technological delivery solution or innovation. For the most part, the impact of these new technologies is still formulating, though investor financing, early adopter enthusiasm, and an innovating organization's own promotional efforts certainly aim to position particular innovations as breakthrough or disruptive.

What is actually happening on campuses is less sensationalized but equally critical for the innovative development and sustainability of the community college as a postsecondary organizational form. Institutions are drawing on the strengths of traditional solutions and combining it with the potentiality of emerging technological innovations to create new and dynamic service solutions for students. The flipped classroom, whereby innovative faculty place fact-based, technical material online for student viewing but use valuable classroom discussion for application and critical discourse on the topic, is one example of the merging of ideas that is taking place.

The community college world has already experienced business model innovation through an entirely online institution in Rio Salado College. Technological innovations that enable new possibilities within the industry will continue to enable

service, process, and business model innovation. It is possible that a two-year MOOC business model is on the horizon, ready to transform the entire industry. The Innovation Framework suggests that incremental service or process innovations more accurately describe the day-to-day realities of community colleges. The Innovation Framework also brings coherence to the burgeoning topics that fall under the domain of innovation, one of which is Christensen's widely discussed construct of disruptive innovation.

Disruptive and Breakthrough Innovation in Postsecondary Education

A significant issue for community college leaders is how the concept of disruptive innovation and its accompanying criteria apply to higher education. Disruptive innovation redefines the future but also leaves a wake of destruction in its path, in the form of immobilized organizations that did not adopt it. The stakes are high, and the ability of community college leaders to identify disruptive innovation holds practical significance. If an innovation is truly disruptive, leaders must invest time, energy, and resources into the innovation or risk extinction. Collins (2011) eloquently states that when one finds a sure success, leaders should go all in and fire a cannonball; but if there are legitimate questions that testing and experimentation may help resolve, fire bullets instead. In addition, innovations mistakenly identified as disruptive carry the burden of unrealistic expectations and overinvestment that might have been better allocated to other projects and initiatives.

Christensen's (2000) landmark contribution on disruptive innovation provides specifically derived criteria that may qualify an innovation as disruptive. These criteria arose from a careful, in-depth study of the disk-drive industry and were subsequently found to apply across additional for-profit industries, such as the mechanical excavator market and the steel industry. A summary of six criteria capture the most prominent characteristics of disruptive innovation. First, disruptive innovations are typically cheaper, simpler, and frequently more convenient than what is currently on the market, but their performance is worse, or perceived to be worse—at least in the immediate term. Second, the characteristics of the disruptive innovation mean that its appeal starts down-market, with a few fringe customers. Third, disruptive innovators are those who operate outside the established value network. The value network is the web of customers, suppliers, competitors, relationships, and processes that bound the current industry providers. Disruptive innovators are not shackled by the existing value network and the accompanying expectations and norms that prevent established providers from executing on new product or service delivery. A related fourth characteristic is that a disruptive innovation starts with a new technology; so theoretically, any organization can build that technology into its existing products, services, or processes. Christensen's insight reveals that this does not happen, though, and it is a new organization or a new subsidiary to an existing organization (that is, new business model) that brings the disruptive innovation to market. Fifth, the appeal of disruption grows and eventually comes to dominate the market as it moves upmarket. The eventual market domination leads to the sixth and final

characteristic, which is the failure of leading organizations. Today's leaders go out of business or, at the very least, lose the majority of their market.

Disruptive innovation is most closely aligned with business model breakthrough innovations represented in the lower right-hand corner of the Innovation Framework. These new business models are breakthrough because they have invented or adopted technological breakthroughs in products, services, or processes and strategically figured out how to distribute the innovation. The prospect of examining postsecondary education through the lens of disruptive innovation does hold great promise, but its application should not be assumed or automatically applied to all innovations taking place in the industry. In addition, there are differences between the private sector roots upon which Christensen's findings originate and the public sector to which most community colleges belong. Dunn (2012) points out that public organizations are different from private organizations because they endeavor toward public goals that reflect the public's interest; the services they offer are not exclusively private and therefore result in collective and private benefit. Public organizations also must navigate public policy processes, which are driven by the complex web of competing stakeholder interests. Stakeholder interests in the public sector are decidedly more value-driven (in the non-economic sense), controversial, and entrenched than is typical in a private organization.

Particular innovations in postsecondary education may be examined across Christensen's original criteria and within the context of the public sector environment to determine whether the weight of evidence merits the disruptive label. This exercise has yet to take place. Christensen and Eyring's (2011) excellent book on innovative universities, for example, was not an attempt to comprehensively and systematically apply disruptive criteria to BYU-Idaho and Harvard, but to make the case through the historical chronology of these institutions that established colleges and universities will have to break with tradition and simultaneously build on what they have always done best.

The following six questions draw on a summary of Christensen's original disruptive criteria, but as they might be applied to innovations in higher education:

Initial Indicators

1. Is/was the innovation cheaper, simpler, and more convenient than what is currently on the market? Also, are the innovation's performance outcomes controversial or perceived as lower quality than those of existing services?
2. Are/were initial consumers of the innovation down-market or fringe customers who are/were not served by existing providers?
3. Is/was the disruptive innovation produced outside the established value network of traditional colleges and universities?
4. Is/was a new organization or a new subsidiary to an existing organization bringing the disruptive innovation to market?

Outcome Indicators

5. Has the appeal of disruption grown to eventually dominate what the market offers?
6. Have previous market leaders gone out of business or experienced significant revenue or enrollment decline?

Disruptive innovations must reach a hefty threshold as defined by the six questions extracted from Christensen's original work. The threshold is difficult to reach because transformational innovations are not everyday occurrences; they are rare. Christensen (2000) also observes that disruptive technologies emerge only occasionally. Importantly, not all breakthrough innovation is disruptive, though disruptive innovation is breakthrough.

In practical terms, an innovation may meet some but not all of the criteria to absolutely qualify as a disruption, and therefore people will legitimately disagree about whether that innovation is disruptive. Caution may be in order, however, if several of the criteria are not met. Western Governor's University (WGU) is an example of an innovation that has been the subject of much study and debate. WGU is convenient and simple, and it is offered at a very affordable price (meets criteria 1). WGU, as a new organizational form (meets criteria 4), was in a strong position to offer competency based credit to an adult market not fully served by existing providers (meets criteria 2). WGU has not disrupted or dissolved the value network of existing colleges and universities (does not meet criteria 3) and in fact relies on accreditation and partnerships with current providers who constitute the current value network. In Indiana and Washington, where WGU has created state-based WGU brands, the importance, not dissolution, of the current postsecondary industry value network is prominent. Community college system officials have actually been a key partner in working with WGU to develop transfer and articulation agreements between the two-year sector and WGU in these states. Finally, while WGU has shown promising signs of growth, enrollment demand for traditional institutions remains strong and shows few signs of declining to the extent that those institutions would go out of business (does not meet criterion 5 and 6).

The exercise of applying the disruptive criteria to WGU, as an example, illustrates why industry observers and researchers may reasonably disagree on the magnitude of an innovation's impact and whether, at a particular time, it should be classified as disruptive. Innovations that are in the early or middle stages of their life cycles are especially difficult to definitely characterize as disruptive, because predicting the effects of the innovation is not an exact science. From a community college perspective, examining evidence such as the six criteria serves as a guide to help assess the magnitude of the innovation's impact and what that may mean for the students, institutions, and even the industry.

The disruptive criteria provide parameters around which to assess innovation, yet the effects of early innovations are very difficult to predict. Innovators, venture capitalists, and funders will, by their natural optimism and enthusiasm for the

innovation, encourage visions of disruptive or breakthrough impact, especially if early evidence is promising. MOOCs provide yet another example of how difficult it is to characterize an innovation that generates as much enthusiasm as questions. Online providers or new companies like Coursera and Udacity, the popular MOOCs companies, may be breakthrough in the sense that they seem to be expanding to new markets rather than taking away from existing institutions. Yet there are still many unknowns regarding these upstart companies: What is the scope of their reach? Will they be sustainable without foundation and venture capital funding? Will they eventually take away market from public institutions and drive them out of business? What does this mean for different student populations?

Further questions arise when MOOCs are considered vis-à-vis the current industry's own activities. In higher education, traditional colleges can and do creatively experiment with these same technologies and innovations. A good example is Edx, the MOOC partnership started by MIT and Harvard, and later joined by Berkeley and the University of Texas System. Complicating matters even further is that innovative organizations like Coursera that emerge to leverage the new technologies are not necessarily competing against traditional colleges and universities. They actually rely on traditional institutions as providers or they are signing agreements to provide MOOCs to institutions that wish to buy courses off the shelf.

From a strategic perspective, community college leaders may wish to examine alternative futures, opportunities, and challenges that accompany MOOCs. Currently, MOOCs have become very high profile because of the diffusion possibilities and the many stories that emphasize accessibility to elite professors from elite universities. As more public institutions join these high-profile efforts or experiment with their own versions of free (or almost free) course delivery via technology, more possibilities will emerge that hold implications for community colleges and underserved populations. What if, for example, MOOCs that focus on lower-division courses, offered by excellent community college faculty, go viral? What are the implications for community colleges? Will the online convenience make the ideal 25-to-30-mile-access irrelevant for the populations that community colleges care about? How might free or near-free lower-division course availability compare to the history of California, which at one time provided free classroom courses at community colleges?

An Inventory of Innovations

Disruption has been an important and influential lens to help leaders understand technological innovation. Other lenses also may expand our understanding of innovation and prove useful for administrative decision making. Kim and Mauborgne's (2005) Blue Ocean concept, for example, captures some of the substantial and breakthrough innovation occurring in higher education today. The features of a Blue Ocean, in fact, include many of the features of MOOCs companies and WGU. Blue Oceans emerge when an innovator creates a product or service that is a synthesis of select features of existing or previous offerings and perhaps delivered in a novel way. The traditional cost-value tradeoff is resolved by creating,

raising, eliminating, or reducing features relative to existing offerings. The defining feature of Blue Ocean innovation is that it opens new market spaces. Demand is created rather than fought over. One organization's success does not necessarily spell the demise of another, though traditional providers may, over time, change or even transform as a result of an innovation's influence.

The fascination with innovation is well-justified and worthy of leadership attention. The quest to increase student success and meet audacious completion goals for the states and the nation demand that community colleges innovate and change while simultaneously building on what they have always done well, as Christensen and Eyre (2011) counsel. It is a balance between stability and change. It is possible that in twenty years, community colleges as we know them will no longer exist because the influence of new and bold innovations has forced a transformation. It is also possible that traditional institutions may continue to serve more students but, at the same time, account for a smaller percentage of the growing market. The most likely scenario is that community colleges will continue to experiment with innovation and, at the same time, interact with new organizations that champion new technologies. Colleges will partner with these new organizations in one instance, compete with them in another, or possibly ignore them in yet a completely different situation.

In the end, popularized ideas such as disruptive innovation and creating Blue Oceans carry certain connotations associated with their origins. Thus, it is appropriate to consult those origins and determine whether the ideas apply to the community college or can be adapted in such a way that is useful and meaningful to the industry. Perhaps what we call an innovation is less important than characterizing it in a way that informs the administrative decision-making that accompanies our best intentioned efforts to continually improve student success. For this reason, the Innovation Framework in Figure 1 does not speak to only one particular form of innovation but instead examines many innovation possibilities and their impacts.

Community colleges manage an inventory of innovations from within and outside the organization, at any given moment. Different innovation types, from service to business model innovations, produce different impacts, from incremental to breakthrough. All these innovations have played a role in the progressive path that community colleges have forged, and all these innovations will play a role in the future. Identifying disruptions and Blue Oceans carries intrigue and value, but leaders may also want to examine today's incremental and substantial innovations that become tomorrow's breakthroughs.

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The Disruptive Revolution in Academe: Community Colleges as Disruptive Innovators

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While the terminology is new, community colleges have always been disruptive innovators, and the Maricopa Community Colleges are no exception. The history of the development of the Maricopa County Community College District is filled with words such as turbulent, evolution, insurrection, risky innovation, and transformation (Felnagle, 2000). The early years were tough, to say the least: "the real cause of the insurrection was a seething, roiling malaise that had been building up for nearly a decade" (Felnagle, 2000, p. 15) combined with a number of events that culminated in a perception that "something was fundamentally wrong with the district. It was changing – losing its focus…." In the fall of 1977, a new chancellor was appointed to lead the Maricopa District. Paul Elsner created significant unrest during his first year on the job with the creation of a new college without a campus and no full-time faculty, Rio Salado College (Felnagle, 2000). In the mid-1970s, the Maricopa Community Colleges were not only changing, they were evolving, consistent with the broader transformation of America's junior colleges to the comprehensive community colleges we are familiar with today.

The concept of disruptive innovation resonates with community colleges as these institutions have functioned as the disruptors to traditional higher education over the past fifty years, changing the landscape of higher education at an unprecedented rate through the 1960s and 1970s, and continuing as a critical component of higher education today. The Carnegie Commission posits that the "most striking structural development in higher education has been the phenomenal growth of the community college" (Meier, 2013, p. 3). This chapter will paint a picture of community colleges as disruptive innovators (Christensen & Eyring, 2011) in the ecosystem of higher education, discussing some of the disruptive technologies used by Rio Salado College in "breaking down the barriers of time, distance and affordability without sacrificing high-quality academics" (Bustamante, 2011, para. 19), and look to the future of community colleges to continue their role as disruptive innovators.

The growth and development of community colleges has been well documented related to the increasing number of high school graduates needing postsecondary education, vocational training for the increasingly industrial society, and the vision of university leaders in the late 1890s to relegate the first two years of collegiate general education and vocational education to a new entity, the junior college (Cohen & Brawer, 2008). However, the context of the expansion of higher education to include the junior college is more comprehensive. The broader context was "a series of complementary economic, social, and technological innovations so extensive that each has been characterized as a revolution" (Meier, 2013, p. 9) with the outcome being the model of a comprehensive, community-based institution, the model that remains dominant today.

While a comprehensive community college may be the model, community colleges are adaptive organizations. Twenty-first century community colleges have altered their structures, missions, and goals in response to the new, globalized economy (Levin, 2001) and the communities that these institutions now serve are global communities, business communities, and distributed learning communities no longer bound by geographic vicinity. "Community colleges have developed a more overt entrepreneurial culture, with a 'managed' organization that can provide efficient and flexible programs tied to market demands" (Levin, Kater, & Wagoner, 2011, p. 1).

In concert with the historical context of the development of community colleges, it is also important to provide context within the framework of higher education generally, within which the community college is a disruptive innovator. The democratization of higher education has a relatively recent history. We need to be reminded that in 1940, the percentage of adults over age 25 who had completed college was less than 5 percent. "Today, nearly 90 percent of adults over 25 have high school diplomas, and nearly 30 percent have college degrees" (Wiley, 2006, p. 328). Wiley goes on to note, "It is fair to say that the GI Bill and the dramatic expansion of postsecondary education powered the U.S. economy for the entire second half of the twentieth century" (p. 328).

But times have changed dramatically. American higher education is attempting to navigate the perfect storm of a financial crisis, years of increasing accountability, and a decrease in public support. The results to date have been calls for a sea change which, over time, will lead to transformational change for higher education. "At the start of the twenty-first century, public higher education appears to be in a state of crisis" (Ehrenberg, 2006, p. xiii). The confluence of significant limitations in state funding may decrease access and reduce quality, a dangerous combination for an institution long revered for those very qualities (Ehrenberg, 2006). As public schools underwent intense scrutiny in the 1980s following the report *A Nation at Risk* (1983), "old university hands predicted that higher education would eventually suffer the same fate. They were soon proved right" (Bok, 2006, p. 1), which brings us to disruptive innovation.

Transformational change is at the heart of disruptive innovation. Christensen, Horn, Caldera, and Soares suggest:

> Disruptive innovation is the process by which a sector that has previously served only a limited few because its products and services were complicated, expensive, and inaccessible, is transformed into one whose products and services are simple, affordable, and convenient and serves many no matter their wealth or expertise. (2011, p. 2)

Consistent with most successful enterprises, higher education has historically operated within a pattern of sustaining innovation—of emulating successful or prestigious institutions, improving programs and services, and noting the competition. "Sustaining innovation makes something bigger or better," whereas "disruptive innovation, by contrast, disrupts the bigger-and-better cycle by bringing

to market a product or service that is not as good as the best traditional offerings but is more affordable and easier to use" (Christensen & Eyring, 2011, p. xxiv). Higher education has operated in an environment of sustaining innovation, only recently having been impacted by disruptive innovation due to rising costs, expansion of online learning, and decreased public support. When Christensen and Eyring apply the concept of disruptive innovation to higher education as a sector, community colleges are the disruptors, and online learning is the disruptive technology.

"Today the traditional university's challenge is to change in ways that decrease its price premium and increase its contributions to students and society" (Christensen & Eyring, 2011, p. 396). Disruptive innovation focuses our work on serving more students and improving quality while reducing costs. Many of the changes that have occurred in higher education over the last decade have been facilitated by new technologies and new ways of organizing around these technologies" (Smith, 2008). The relatively recent history of the development of the Internet and the World Wide Web—we sometimes need to be reminded that these are relatively recent phenomena—and the shift from computer technology as a desktop tool to a massive communications link applied to teaching and learning are vehicles of change for higher education (Diaz & Cheslock, 2011). The need for improved access, increased flexibility, and enhanced efficiencies have driven enrollments in e-learning courses at record pace. "Enrollments in e-learning courses have surpassed by ten times the National Center for Education Statistics predicted growth rate" (Smith, 2008, p. 15).

Community colleges, as disruptors to higher education, target traditional (low-end) and nontraditional, or new market, students in the lower-level general education courses, which causes the university to become an unconscious provider of upper-division courses (Smith, 2008). Community colleges also utilize e-learning as a disruptive technology. Both of these factors are exemplified by the Maricopa Community Colleges and, in particular, Rio Salado College, the college without walls.

Rio Salado College

Rio Salado College (RSC) is one of the ten colleges in the Maricopa County Community College District, and is the largest online public community college in the country. Rio Salado College is an excellent example of disruptive innovation, not only for its technology-enabled distributed learning, but for its tumultuous history, a characteristic of disruptive innovators. Conceptualized as a college without walls consolidating extension classes, outreach, and other offerings, RSC was both disruptive—other colleges within the district rightfully feared losing student enrollments they had worked hard to recruit—and innovative. California had a model of a college without a campus with Coastline Community College, but there were not many examples to point to at the time (Felnagle, 2000). Rio Salado College has grown up well, currently serving over 70,000 students annually, with more than 43,000 taking online classes and approximately 27,000 taking classes

in-person through RSC's adult education program, dual-enrollment courses, workforce training programs, and hybrid and independent study courses.

Even in its early years, RSC embraced the latest technology, offering distance learning, mixed-media courses, and closed-circuit television lectures. In the mid-1990s, at the same time the Internet was rapidly expanding, RSC began offering courses online, with a modest 16-course beginning. RSC utilizes technology and partnerships to serve working adults and other specialized populations who find it challenging to pursue higher education at a traditional institution. From its beginning, RSC had the organizational flexibility to adapt to changing market trends, offering educational programs and services uniquely tailored to the communities it serves, but the flexibility came at a price. The concept of a college startup without full-time faculty was anathema for other district faculty. An *Arizona Republic* newspaper article at the time reported "Maricopa County Community College teachers on Thursday denounced the proposed Rio Salado College as a hoax…" (Felnagle, 2000, p. 158), but Elsner fought on. Currently, RSC offers more than 600 online classes and 100 degree, certificate, and transfer programs.

As a disruptive innovator, Rio Salado College challenges the limits of tradition, significantly impacting public higher education. Rio Salado College models an entrepreneurial spirit and has developed a culture that embraces change. RSC promotes an atmosphere where out-of-the-box thinking can flourish and innovation can unfold by incorporating business strategies and strategic partnerships to benefit higher education and the diverse clientele RSC serves. The business modeling of productivity and efficiencies allows for RSC's return on investment from a fiscal standpoint to subsidize the district's fund balances in a manner that other campuses are not able to realize. In summary, Rio Salado College exemplifies the spirit of disruptive innovation in practice.

Culture Matters: A Systems Approach

Building on the entrepreneurial culture that gave rise to Rio Salado College, Linda Thor, who served as president from 1990 to 2010, led RSC in a collegewide practice of systemic innovation based on sound business and entrepreneurial practices. Rio Salado College, along with other institutions at the time, adopted the Total Quality Management (TQM) philosophy, which evolved at RSC into a strategic approach to management based on Senge's (1990) disciplines of a learning organization. But even RSC, a disruptive innovator within the Maricopa District, was being challenged by competitors and needed to continue to adapt.

Over time, Rio Salado College has intentionally built a business-oriented employee and management culture that supports faculty and staff who are innovative thinkers, who embrace change, and who work effectively to remove barriers to higher education for the students the college serves. Current President Chris Bustamante describes RSC's ongoing process of employee training and development as reinforcement of its innovative and learning culture. Through extensive orientation, training, and continuing education, the college focuses on developing and growing a workforce that has a deep understanding of the RSC

culture and mission; employees who are change-adept and, therefore, able to respond to the fast-moving environment that constitutes the norm at the college. Over the years, RSC has adopted a set of core values which enhance a collaborative culture that supports innovation through a systems approach. This model, based on learned experiences, has resulted in a productive, efficient, and scalable higher education model that is affordable, flexible, and convenient for students—some of the hallmarks of a disruptive innovator.

The Upside Down Instructional Model: Unbundling the Faculty Role

Since its founding, Rio Salado College has maintained a nontraditional faculty structure. A small Faculty Chair cohort (23 in fall 2012) serve as department and program heads and instructional leaders, while over 1,554 adjunct faculty, most of whom are practitioners in their fields, teach the vast majority of courses. The structure also allows for considerable flexibility in positioning the college to embark on new and innovative instructional initiatives. The use of adjunct faculty allows for flexibility in staffing classes that start regularly on Mondays. This dual approach to faculty allows for quality control and consistency in both course development and instruction, and the *one course–many sections* online content model ensures high quality in course design and delivery, with extensive processes in place to evaluate and support adjunct faculty teaching efforts.

There is generally one full-time residential faculty member per academic discipline or department who also serves as the Faculty Chair. The Rio Salado College Faculty Chair model is based on maintaining a compact, flexible, and innovative leadership group of discipline experts who manage their programs, projects, initiatives, and services while supervising a large contingent of adjunct faculty. New Faculty Chair positions are filled in strategic areas to support innovation and expand the college's expertise in disciplines beyond its current offerings. This helps provide a more robust platform for participating in national initiatives.

The e-learning environment has altered faculty work and unbundled the faculty role. "The unbundling of the faculty role occurs when tasks that were all normally performed by a single faculty member—such as course design, course development, presentation of content, interaction, assessment, evaluation, and advisement—are unbundled so that they can be performed by others or through distributed technologies" (Smith, 2008, p. 13). At Rio Salado College, there is an instructional support structure in place consisting of non-faculty personnel who manage many of the unbundled tasks.

Instructional Support Model

The Instructional Support Model enables the college to maintain its structure of a small cohort of Faculty Chairs, and yet continue to meet enrollment growth while delivering high-quality instruction. The Instructional Coordinator position assists the chair with such matters as refinement of department policies and procedures; overseeing the tracking of adjunct faculty, student, and course issues; and coordination of assessment efforts. In practice, the Instructional Coordinators,

Discipline Specialists, and Lead Faculty are hired from the ranks of expert adjunct faculty members. The Instructional Support Model provides distinct advantages:

- Allowing college enrollment indefinite scalability;
- Rapidly deploying new initiatives, strategies, and instructional programs;
- Freeing Faculty Chairs to benefit from interdisciplinary interaction;
- Creating a succession plan for Faculty Chairs through training and mentoring of Instructional Support Personnel; and
- Unbundling the Faculty Chair responsibilities.

Course Design: The One Course–Many Sections Model

Rio Salado College offers online, hybrid, and mixed-media courses in a one course–many sections model, which means there is a single version of a given course, with all of the content and assessments included. Courses are developed and written by the Faculty Chair or a designated content expert. That one set of course content is published by the college and serves as the basis for any adjunct faculty member who teaches that particular course. The one course**–**many sections model contrasts with the unique course model used by most colleges and universities, where every faculty member creates a unique version of the course they teach.

RSC's model presents several advantages to the college, instructors, and students:

- Course materials are consistent in look, feel, and navigation;
- Courses follow established quality standards for instructional alignment and assessment;
- Courses contain only permissible or licensed materials that do not violate copyright laws;
- Instructors are free from the work of creating and updating content and assessments each semester;
- Instructors are more able to focus on interacting and engaging with individual students; and
- Student performance data is easily collected because assessments are common among sections, and interventions can readily be implemented regarding course content, assessments, or teaching strategies.

Rio Salado College's one course–many sections model works in part because the college developed its own course management system. RioLearn, a scalable system that supports the unique features offered by Rio Salado College, including the block calendar and Monday start dates, also ensures that RSC never cancels an online class. Predictive modeling technology is utilized to increase completion and success rates. The Progress and Course Engagement (PACE) system measures student engagement early in a course, detects at-risk behaviors, and alerts the instructor. Predictors include frequency of student logins, site engagement, and pace of assignment completion.

Another example of the use of technology in disruptive innovation is Rio Salado College's fully online comprehensive offering of student services, including advising,

tutoring, career counseling, disability resources, financial aid, cashier, bookstore, RioLounge (an online social networking site), 24/7 instructional and technology help desks, and a Librarian Chat. In keeping with the college's commitment to customer focus and relentless improvement, all of these departments provide services in multiple modalities to maximize access.

Productivity, Efficiency, Affordability: Rio Salado College as a Disruptive Innovator

When Rio Salado College first started offering courses via the Internet in 1996, critics (including some of Maricopa's own faculty and staff) challenged the quality of online education and claimed that students wouldn't adjust to such a radical change in their learning environment. An *Arizona Republic* article from 1978 states

> The idea was to produce an informal institution that ignored such subjects as Latin, medieval history, and trigonometry. Higher education would be taken to the people, with classes being held in empty stores, church lounges and other available spots.… The decision led to the creation of the Rio Salado Community College, named for a non-existent river and offering a curriculum that apparently falls short of accepted standards. (as cited in Felnagle, 2000, p. 171)

However, the Maricopa County Community College District and Rio Salado College moved forward, determined to create an innovative, nontraditional, and nimble approach that is responsive to and supportive of changing student needs (Bustamante, 2011), because this is what disruptive innovation is. And despite the early critics, Rio Salado College has earned a national reputation as an innovative leader in higher education.

- *Beating the Odds* (HCM Strategists, 2011) recognized RSC for its lower-cost, high-performing model focused on serving students traditionally underrepresented in higher education.
- The Lumina Foundation featured Rio Salado College in *Flexing the Faculty*: *When These Few Educate 60,000, Productivity Rules* (2011), focusing on RSC's innovative, low-cost, high-quality, and productive higher education model that breaks the traditional departmental and academic boundaries and sets the stage for continuous improvement at the college.
- McKinsey & Company's *Winning by Degrees* (Auguste, Cota, Jayaram, & Laboissiere, 2010) reported RSC's cost to educate a full-time student equivalent at 44 percent below peer institutions nationally, and recognized RSC as one of eight highly productive higher-education institutions in the U.S.

Rio Salado College continues to find ways to be innovative within a disruptive environment, where pushing the envelope in support of access, convenience, and student success is part of the daily culture of academic life at the college. President Bustamante notes:

> Our country can't continue to allow millions of people who are college material to fall through the cracks. We must find new, convenient and high-quality educational options for students who might otherwise have missed out on a college education. That means serving more students in more places—especially where college enrollments have been capped—through efforts such as online early college initiatives, by creating cohorts at the high school level and developing open–source courses.… We need to innovate. We need new models of education to leverage public resources through private and public partnerships and increase the capacity to serve nontraditional students through productive and cost-efficient means. (2011)

Advancements in information technologies and the proliferation of e-learning environments have provided increased avenues for business modeling and educational production to infuse the discourse within higher education and to support disruptive innovation. As Rio Salado College continues to chart its course of innovation and excellence, the challenge will be on what or who disrupts the disruptor.

The challenge for community colleges, which have consistently been innovative, Unnecessary and out of place is to grapple with the disruptive part of disruptive innovation. For community colleges, the disruptive innovators in higher education, the question is, "What's next?" In the early years of the junior college movement, "community college leaders side-stepped issues of educational quality and institutional outcomes by emphasizing access, innovation, and growth, equating these organizational attributes with the democratizing mission of 'People's Colleges'" (Meier, 2013, p. 15). The critical question on the horizon for community colleges as disruptive innovators is, "can institutions defined only by access and growth continue to maintain themselves?" (Meier, 2013, p. 16). The American Association of Community Colleges and institutional leaders across the country think not.

Christensen and Eyring make the case for evolutionary adaptation in higher education (2011). Community colleges, both supported and criticized for being all things to all people have set the stage to redesign, reinvent, and reset themselves in *Reclaiming the American Dream* (American Association of Community Colleges, 2012), but even this requires an evolution of community colleges as organizations. Community colleges historically have been the responders, mirroring social and economic change rather than leading it (Meier, 2013). We suggests that it is time for us to lead the way.

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Church and State of Mind: Faith-Based Initiatives Prepare Students for the World in Which They Live

Jackson Sasser, President, Santa Fe College

Santa Fe College is positioned to become the first Charter for Compassion campus in the Eastern United States and only the second in the nation. This landmark event will take place when the college signs the Charter for Compassion at spring convocation in January 2013. Crafted by former nun, Karen Armstrong, and prominent thinkers of many of the world's religions, this document calls for understanding the world as others see it—putting ourselves in their shoes—which is a principle lying at the heart of all religious and ethical systems. Santa Fe College joins a group of prominent individuals. Nobel Peace Prize winners Desmond Tutu, the Dalai Lama, and other spiritual and political leaders are among those who have signed this cooperative effort to restore compassionate thinking and compassionate action in today's world.

Affirming the charter is one of many faith-based initiatives Santa Fe College embraces as it remains a secular institution. The college is in the process of affiliating with the Pluralism Project at Harvard University, one of the nation's most prestigious interfaith programs. This fall, Santa Fe added a new course, Introduction to Religion, and incorporated it into the general education curriculum. It is in such demand that another section had to be added. Beyond campus, the college is partnering with local churches and FloridaWorks, the county's state-supported regional workforce training and unemployment office, to provide job-seeking assistance in houses of worship within the African-American community.

These initiatives reflect Santa Fe's leadership and prominence in faith-based education. When I was invited to a meeting at the White House this spring on the subject of faith-based initiatives, I was one of few community college presidents in attendance. The college's long-standing affinity for faith-based endeavors has both local and global roots. Two of the first major educational programs I implemented when I became president in 2002 were the East Gainesville Initiative, which provides tutoring and counseling to the African-American community through the pastors and their churches, and the International Initiative, which aims to reduce the likelihood of tragedies such as 9/11, often religious in nature, by weaving world perspectives into subjects, courses, and activities. The issue of religious tolerance has particular relevance in Gainesville, Florida, the location of Santa Fe College, because it is where Terry Jones, pastor of Dove World Outreach Center, earned worldwide notoriety for burning the Quran in 2011. His destruction of the sacred book of Muslims sparked protests in a city in northern Afghanistan, in which at least a dozen people were killed.

Giving people the skills to survive and prosper in today's global economy is the motivation behind a new faith-based program Santa Fe began offering this summer through FloridaWorks and the college's Community Outreach and East Gainesville Instruction, formerly known as the East Gainesville Initiative. (The name was changed to reflect that the community effort is no longer new, but rather an

ongoing and respected project). Florida's unemployment rate is one of the highest in the nation, and in Gainesville the problem is particularly acute in the African-American community on the city's east side. From 2008 through 2010, unemployment in the city of Gainesville was estimated at 13.6 percent for African Americans, compared with 6.2 percent for Whites, and 9.2 percent for Hispanics, according to data from the U.S. Census Bureau (2012). Dr. Karen Cole-Smith, executive director of Santa Fe's Community Outreach and East Gainesville Instruction, arranges for church volunteers to receive training at FloridaWorks to assist job seekers, using a broad range of computer programs and services. The volunteers take this information back to their churches, where, with computers provided to the congregation by Santa Fe, they train parishioners who are out of work and need assistance finding employment.

The churches are a natural ally for people experiencing the trauma of job loss, said Kim Tesch-Vaught, executive director of FloridaWorks. "When somebody needs help, the person that they're most comfortable going to for help is a family member or someone they consider family, and many times that's their church family," she said. The unemployment office can be intimidating, with as many as 750 to 1,000 people passing through in a week, sharing what computers and job counselors are available, Tesch-Vaught said. "Having a [church] volunteer who is willing to sit next to somebody and work with them at their own pace and is a familiar face takes some of the intimidation out of the job search process," she said. As an added benefit, many church leaders are business leaders who may be able to offer members of their congregation personal insight into possible leads for employment, according to Tesch-Vaught.

Just as important as the emotional connection is the ability to physically connect. Traveling to FloridaWorks is difficult for many residents because it is located in the extreme south end of town and near the last stop on the bus line. Churches are closer to home. FloridaWorks has tested the concept of training volunteers to teach job skills to people within their own communities. When Georgia Pacific closed its plywood mill in Hawthorne, a small city near Gainesville, in 2011, laying off 400 workers, members of the city council and local chamber of commerce went to FloridaWorks to learn job-finding skills to bring back to their constituents.

Employment strengthens families and enables them to educate their children, often at a community college. Through Santa Fe's Community Outreach and East Gainesville Instruction, young people receive a broad range of services at every stage of their development, helping them transition from early childhood through secondary school and on to college and good jobs. The program serves adults seeking to improve their lives through education and enrichment. There are financial literacy camps, computer classes, college-preparatory services, and science and math programs.

Assisting the underprivileged of East Gainesville fits squarely within the college's mission of educational opportunity and serving the community. Recognizing the history and heritage of the city's east side extending back to the 19th century, with its rich assortment of churches, service clubs, fraternities and sororities, and

cultural organizations, Santa Fe took direction from the community itself in implementing the program. A significant faith-based element is included because churches have long been the social, spiritual, and political centers of the African-American community. Pastors are universally respected by their congregations and are positioned to identify and direct young people to the program's services, reaching a constituency the college might not be able to reach on its own. "They're speaking from a church pulpit every Sunday and congregations range from as low as 100 to up to 1,000-plus members," said Cole-Smith, program director. "And because these churches are led by pastors who believe in not only a spiritual education but the importance of education academically, it's a win-win situation for everybody."

Local ministries appreciate the value of learning, being in a college town that includes Santa Fe and the University of Florida, Cole-Smith said. That sentiment was echoed by pastors involved in the initiative. "What I like about East Gainesville Instruction is that it helps the community in a broad perspective beyond just the spiritual," said Pastor Adrian Taylor of Springhill Missionary Baptist Church. "I think the spiritual is paramount, but I also believe education, employable skills and life skills training are important to people as well." Adds Pastor Karl Anderson of the Upper Room Church of God in Christ, "If you look at it in a practical way, if people are unlearned, if they are uneducated, it will make the church work harder on many levels economically. We'll suffer. It would be hard for us to have a Bible study if people can't read."

Through Community Outreach and East Gainesville Instruction, Santa Fe, since its inception as an open-door institution, has made a college education possible for many young people. Often these students are the first generation in their family to attend college, benefiting from opportunities in the program such as tutoring for standardized tests in Florida's public schools, exposure to math and science in summer camps, and even something as basic as access to computers. "Statistics show that in the African-American family there are four out of 10 homes that have access to a computer," said Willie King, pastor of Showers of Blessings Harvest Center. Community Outreach and East Gainesville Instruction placed computers in churches for congregations to use, and in one program installed them in some homes. In Pastor Anderson's congregation, one single mother with nine children who received a computer is seeing the benefits; two of her sons are attending Santa Fe. "For the first time in that entire family, they are going to have college graduates," Anderson said. "They even have siblings now that are getting ready to attend Santa Fe." Besides bridging the digital divide, Community Outreach and East Gainesville Instruction has increased interest in math and science through its Tutoring Tuesdays program for middle school and high school students and a summer camp in math, science, astronomy, and life skills. African Americans have been disproportionately underrepresented in the sciences. It is inspiring to hear students who once said, "I hate math. I hate science," say, after taking the programs, "I think I'll get a science book," or "Maybe I'll go to another camp that deals with math or science," said Cole-Smith. It shows they are now willing to explore those disciplines. Some of the biggest scholastic gains stem from the tutoring students receive in church computer labs for the statewide Florida

Comprehensive Assessment Test (FCAT) they take to advance to the next grade level in school. These students are passing the test in high numbers and have dramatically improved their writing and critical thinking skills, according to the ministers. Regardless of programs students are in, they are better prepared for and more receptive to a community college education, the pastors agree. "It keeps Santa Fe College in the ears of the people, especially our young people," Pastor King said. "We let them know that Santa Fe is a great school to go to. We push that really hard."

At Santa Fe, African-American men are served by My Brother's Keeper, a related initiative that offers extra tutoring and counseling to assure they stay in school. The program was launched in 2006 when college representatives became increasingly alarmed by the low retention rates of African-American men. Fewer than half of these students would return to finish their degrees. My Brother's Keeper is well-regarded among the ministry. Pastor King said he recently took two vanloads of African-American men to meet the program's director and learn about the opportunities available to them at Santa Fe.

At Santa Fe, these men and all students have a broad, growing, and constantly changing selection of courses. One of the newest is Introduction to Religion, which the college introduced in fall 2012. It filled quickly. Student enrollment in other religion courses is also robust, reflecting a growing interest in the subject since 9/11. Santa Fe Religion Professor, Rebecca McKee, said students repeatedly tell her how much they learn in these classes and how they have become more tolerant and understanding of other faiths. Studying belief systems that have survived for centuries has particular appeal in an age where a vast amount of information is spontaneously available at our fingertips, McKee said. "News travels so fast that we get bombarded by events—video from cell phones, Twitters from around the world, social networking—much of it has a lot of benefit, but it also leads to fears and questions, which can feel overwhelming to students," she said. In many cases, religion can offer deeper answers. "In terms of really big issues, whether it is a tsunami, hurricane, or tornado, or military action, poverty, the sex trade industry or exploitation of immigrants, it helps to understand how religion is involved, how it helps, how it heals, how it works," she said.

The decision to add Introduction to Religion to Santa Fe's general education curriculum as a core humanities course symbolizes the value the college places on religion as an academic subject, said William Little, chair of the Department of Humanities and Foreign Languages. "It is seen as of parallel quality and importance to philosophy, ethics, and humanities, and it stands alongside them as an equal," he said. According to Little, faculty in other fields support adding religion to the list of required courses students can choose from, recognizing it has value in the social and personal challenges students face in the 21st century.

Another course, Religion in America, examines the exceptionally large number of religions in the United States compared with other countries and the constitutional issues affecting freedom of religion, and is broadening its focus this fall. Students in the class will contribute to the Pluralism Project at Harvard University as part of a

new affiliation Santa Fe is developing. In establishing the Pluralism Project, Diana Eck, a Harvard professor of Comparative Religion and Indian Studies, wanted to chronicle, write, and research about the country's changing religious landscape. Santa Fe students will have a national venue to share their stories, which have involved timely and sometimes controversial topics. Beginning two years ago, students had the opportunity to view the unfolding of events surrounding Pastor Terry Jones of the Dove World Outreach Center, his plans to burn the Qur'an, and the response by federal agents. According to McKee, the controversy spurred thoughtful and lively class discussions about the First Amendment rights of freedom of expression, the role of law enforcement in such a dispute, and how clergy representing various religious faiths in North Florida rallied in support of religious diversity by holding public forums and prayers for peace.

Interfaith topics are prominent in the course titled Contemporary World Religions, in accordance with the college's involvement in the Charter for Compassion. Students prepare projects that explore common ground among those holding differing spiritual beliefs. Because of the large numbers of international students attending Santa Fe and the University of Florida, there is a diversity of religious traditions in Gainesville, and there are many opportunities to learn about them. One local interfaith forum in September 2012 featured representatives of Sikh, Catholic, Jewish, Buddhist, Muslim, and Protestant denominations. Santa Fe has long offered courses in religion, but as the campus population has diversified and the International Initiative permeated the college, the curriculum broadened to encompass a growing number of beliefs outside of Judeo-Christian traditions. In drafting the Charter for Compassion, now translated into more than 30 languages, Karen Armstrong called for shared moral priorities across religious traditions in order to foster peace and global understanding. It was her hope that the world's religious leaders would join and be inclusive in the spirit of the Golden Rule. As of September 2012, nearly 90,000 signatures were affixed to the Charter, with Seattle becoming the first city and Santa Barbara City College the first college to affirm it. By making Santa Fe College a Charter for Compassion campus, the college hopes to promote understanding and tolerance of various religious traditions among its students to take with them through higher education or apply in the global marketplace.

Critics of faith-based programs often raise concerns about the separation of church and state. At Santa Fe, no form of religion is advocated or given preference. The college remains a secular institution that fosters a return to core values extending across religious and ethnic boundaries. That is faith based by any definition. In past generations, such initiatives were left to religious institutions, but there is a growing understanding that public institutions have a social role to address and support them. By embracing the Charter for Compassion, affiliating with the Pluralism Project at Harvard University, and expanding religion courses, Santa Fe is taking steps to further fulfill its mission. The World Humanities Expo, a much anticipated four-day campus event now in its eighth year, which showcases international humanities education with speakers, creative artifacts and projects, research papers, concerts, lectures, and festivities, began merely as an exposition on religions. What was conceived as a small function within the discipline of religion

became the inspiration for a much larger educational experience that incorporates the 4,000 students within the Department of Humanities and Foreign Languages. The department plans to produce a video of Santa Fe students reciting the Charter in various languages and show it as this year's Expo. Respect for different faiths, based on tolerance, harmony, and understanding—fundamental interfaith values—blossomed into a full-fledged international exposition. That is the expansive effect the college seeks with its many faith-based initiatives.

Besides such all-encompassing results, the study of religion often has smaller and unanticipated offshoots. Meditation techniques associated with Buddhism and other Eastern religions is the basis of Mindfulness, a program offered by Santa Fe Biology Professor Greg Jones in a weekly workshop. Mindfulness is the practice of paying steady and complete attention to each moment. It is based on the premise that relaxation techniques borrowed from Eastern spiritual traditions have the physical effect of calming the body's nervous system and hormonal responses, improving the ability to think clearly. Adherents apply its principles for a variety of intentions, including alleviating pain, overcoming anxiety, maintaining focus, and performing at peak levels. Achieving positive change in this manner had intrigued Jones. He had been experiencing high levels of stress and his wife was a chronic pain patient. Once he mastered the art of mindfulness, he wanted to share it with faculty and staff. Four years ago he began offering workshops. This fall, as part of a series on wellness sponsored by the college's counseling center, he will make a presentation on mindfulness and Speech Professor, Patrick Breslin, will make one on meditation. With its emphasis on eliminating distractions and fostering clear thinking, mindfulness has obvious positive applications in higher education, Jones believes, and he points to its appreciation as far back as the ancient Greeks, who valued contemplation in terms of acquiring wisdom.

Whether learning techniques from other religions or the belief systems accompanying them, Santa Fe students have an extensive range of opportunities for increasing their awareness, expanding their knowledge, and developing a better understanding of spiritual practices, and by doing so influencing the world in which they live. Santa Fe College is committed to broadening their understanding of the world, just as it is committed to faith-based initiatives that improve the lives of the people it serves.

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Community Colleges: Ready to Disrupt Again!

Jerry Sue Thornton, President, Cuyahoga Community College

As a business model strategy that extends to new previously excluded markets, disruptive innovation reflects inclusive ideals as it offers new solutions. Typically accelerated by a technology enabler, "disruptive innovation is the process by which a sector that has previously served only a limited few because its products and services were complicated, expensive, and inaccessible, is transformed into one whose products and services are simple, affordable, convenient and serves many no matter their wealth or expertise" (Christensen, Caldera, Horn, & Soares, 2011)2011). Essentially, disruptive innovations simplify a fundamental business or service, making it more widely available.

In the business of American higher education, community colleges were arguably the first true disruptive innovation. American colleges of the colonial period, like their British counterparts, were mostly small, local affairs founded to prepare clergy or civic leaders (Lucas, 1994). Great research universities, the growth of which the Morrill Act inaugurated, were in many respects modeled on their German counterparts, though they brought a distinctively American flavor of practical applications and public service (Veysey, 1970; Lucas, 1994). Teaching was a secondary concern. Indeed, part of the original notion of a junior college was to provide a place to educate new undergraduates that would relieve research faculty at the senior college—the university—of having to teach introductory coursework. The transformation from junior to community colleges in the mid-twentieth century redefined not only their missions but also the market for higher education. The Truman Commission report estimated that some 49 percent of the U.S. population had "the mental ability" (Gilbert & Heller 2010, p. 2) for post high school education and urged that a community college be located within fifty miles of every citizen. In 1930, two year colleges enrolled less than 10 percent of all students; by 2009, that figure had risen to 37 percent (Snyder, 1993; U.S. Census, 2012.) If the G.I. Bill was the fuel that propelled mass higher education in the U.S., community colleges were the engine.

The community college growth period of the 1960s was driven in large part by substantial social change, return of veterans from the Vietnam War, and the overarching desire to make education available to more Americans. Local communities were responding to a felt need to have more educated people available to participate in the democratic process. They wanted access for veterans, those without the means to go away to universities, and working and older adults for whom a commutable education presented a ladder of opportunity to a better future. Faculty members devoted to teaching were willing to step into something new. How fast colleges grew and developed programs depended heavily on local conditions. Starting programs could take anywhere from a few months to a few years, depending on the constraints. Still, innovation ruled the day and community colleges dotted the national landscape and transformed higher education in unprecedented ways.

Now a mature sector within higher education, community colleges have been challenged to reinvent themselves to improve outcomes, including production of more graduates and meeting constantly evolving industry demands (American Association of Community Colleges, 2012). Nationally, community colleges are being called upon to supply well-trained and educated individuals with credentials that qualify them to fill demanding roles in new and emerging fields. Completion of a postsecondary credential or degree has become the new minimum for family-sustaining middle class wages. Employment projections indicate that by 2018 the U.S. will need 22 million new college degree holders to meet 21st century workforce needs, but that we will fall short of this number by at least 3 million postsecondary degrees (Carnevale, Smith, & Strohl, 2010). Further, escalating education costs, often borne by the student through high debt, have generated increased governmental scrutiny. Faced with the twin challenges of increased accountability and the need to produce a more educated American workforce, community colleges must again embrace the kind of disruptive innovation that marked their rapid growth during the 1960s and 1970s. This article explores how various aspects of disruptive innovation might be used to reinvent community colleges for the 21st century and make the promise of student success and completion accessible to more.

Relevance of Disruptive Innovation to Academia

Within education, there are examples of a new generation of game-changing disruptive innovators that can vastly alter the experience students have in our institutions, as well as who has access to those experiences. One example comes from the K-12 arena with the remarkable success of the Florida Virtual School (FLVS). An online school founded in 1997, it served 148,000 students during the 2011-2012 school year, and boasts on its website that it is the only public school with funding tied directly to student performance (Florida Virtual School, 2012). FLVS has created a strong connection between the curriculum and outcomes. "Curriculum can be accessed anywhere, anytime, and completed at any pace. It expands opportunities previously available only to select students in the most privileged schools. Thanks to the online medium, one-to-one student-teacher relationships flourish and teachers are monitored, managed, evaluated and trained effectively and transparently" (Innosight, 2009).

Western Governors University's disruptive innovation higher education model is not driven by the traditional model of seat time in fixed formats, but by competency-based education with a premise that students should demonstrate their knowledge, skills, and abilities at the level of objective standards to receive credentials, diplomas, or licensure. "Competency-based education is well suited to adult learners who already possess capabilities developed through prior work, education, or community experience—and to their employers who want evidence that their workers possess the required abilities to perform in the workplace upon graduation" (Eastmond, 2007).

Another example can be found in the ever-expanding world of Open Educational Resources (OER), which embraces a philosophy of sharing with content, technology,

and code, and the Creative Commons licensing to support it. There are many natural synergies between the disruptive nature of OER and the core mission of many community colleges. Massive open online courses (MOOCs) offer free courses, and free content is offered through repositories like MERLOT, Connexions, or OER Commons. While MOOCs foster innovation in institutions, the possible de-emphasis of credentialing represents a new and disruptive challenge. Informal learning—and even competency-based education—can be disruptive at its core in a way that can be empowering to community college students. The notion of getting credit for current skills and past learning will force further innovations inside higher education, and "...perhaps OER will in fact usher in radically new and broadly accessible learning opportunities. Certification of informal learning is an interesting challenge in this context" (Phelan, 2012, p. 281).

The disruptive influence of mobile technologies is spurring a new innovation in how community colleges view the role of the student. When a student has unlimited information available at any time and any place, the relationship between the instructor and the student changes by necessity. The student now becomes not just the consumer of the information, but the collector, the curator, and the interpreter of information and the producer of new works. Mobile technologies begin to break what O'Banion described as the "time-bound, place-bound, efficiency-bound, and role-bound" architecture of traditional schooling (O'Banion, 1997, p. 9). The authoring relationship changes, and in doing so it represents wide opportunity for students to utilize the higher-order, critical thinking skills that will make them successful in a world of rapid change, where continual learning will inoculate them against becoming obsolete (Koszalka & Ntloedible-Kuswani, 2010).

Once far more nimble, community college systems currently tend to innovate through improvement or sustaining models more than through disruption. Sustaining models focus on improving or expanding existing business models. The commonly used practices within higher education of planning, doing, checking, and acting create a continuous cycle that looks at the same major processes over and over, resulting in improvements that are incremental. Disruption, by contrast, requires a more nimble capability and has the potential to result in major change. Higher education competitors who are more nimble and less risk averse are meeting student needs in new ways and disrupting academia.

Disruptive Innovation and Organizational Culture

Despite numerous constraints, community colleges are discussing disruptive innovation as a systemic shift that will allow them to further the mission of access while providing more effective mechanisms, strategies, and methodologies for getting students to cross the finish line with a relevant degree (Kallison & Cohen, 2010). Financial limitations, increased accountability demands, students underprepared for college-level coursework, educating individuals for unknown emerging industries, and the ever-increasing pace of workforce demands can actually have a positive stimulating effect on institutional culture and practice. The motivation associated with overcoming these challenges can galvanize the human culture of the institution, putting into place an environment ready to either create

or embrace innovative disruptions. Individuals infused with the Innovator's DNA, which includes mastering associative thinking and the skills of questioning, observing, networking, and experimenting, are best positioned to facilitate disruptive change (Christensen, Gregersen, & Cliffe, 2011). Within community colleges, we can position our institutions to embrace disruptive innovation by better understanding these qualities.

Experimenting

An aptitude for ambiguity and a tolerance for the unknown are critical factors in the experimentation process. Also important is the ability of an organization to move fast to rapidly prototype ideas and products and experiment with new models in an environment that tolerates risk. Risk-tolerant organizations create a hothouse for new ideas and innovative ways to implement them by removing some of the stigma of a misstep or an idea resulting in an unsuccessful product or model for learning. This tolerance for risk and the acceptance of initial failure are critical ingredients. Without them, only the most audacious thinkers are able to share innovative ideas, and the environment is soon stifled. In order to facilitate experimentation required of disruption, it is often necessary to create alternate structures unrelated to the core institutional offerings.

The creation of a separate entity makes it possible to manage some of the unique market driven issues required for rapid response and action. The characteristics that make the organization successful in an initial endeavor are typically the same characteristics that inhibit it from embracing and embarking on disruptive innovation opportunities. Therefore, Christensen (1997) suggests that organizations spin off or buy a new organization that is unleashed and untethered from the parent. For example, at Cuyahoga Community College, the Corporate College© was created to respond to corporate training far more quickly than traditional degree programs could. At Corporate College©, functioning in a business-as-usual modality was not an option. To be successful, its offerings had to be delivered in a different way for a different audience. Unlike traditional degree programs, it had a sales unit, new products, and differential compensation.

Questioning

FutureThink, by Weiner & Brown (2006), describes adaptive organizations as being

> …like plants that get around obstacles by sending out green shoots to seek sunlight, water, or fertile soil, they face impediments by finding informal ways to get around, over, or under them. They are nimble and seem to always be asking 'what if?' and 'how about?' and 'why not?' They and their leaders know that they must encourage initiative and innovation. To some extent, this requires a shift from the comforts of traditional thinking. Although this can be scary for some people, freeing the mind leads to the kind of unconventional thinking that is the essential element of nimbleness and that is increasingly necessary in today's fluid and unpredictable environment. (pp. 233-234)

Observing

Organizational leaders must be willing to see information objectively and clearly, not as they would like or hope to see it (Weiner and Brown, 2006). It is important to view all sources of information through a wide angle lens linking trends and events, and seeing patterns and connections rather than single, stand-alone events. They further advise abandoning the practice of ignoring what could be significant just because it doesn't fit current thinking. The error is in ignoring that which does not fit into current thinking—that is where disruptive innovation is igniting. "To lead disruptive innovation successfully requires that we disrupt the most fundamental mindsets and behaviors that have led us to our current success" (Kaplan, 2012, para. 32).

Associating

Given the clear need for community colleges to embrace organizational change and implement disruptive innovation, this paradigm shift in higher education requires deep examination of characteristics and roles required to meet this objective. For leaders, it is necessary to possess the capability to (1) rely on intuition and utilize associative thinking (connecting previously unconnected ideas) rather than data-driven intellect; (2) change the status quo and appreciate an unpredictable environment; and (3) possess courage to take risks, make mistakes, and protect risk-taking team(s) (Christensen & Eyring, 2011; Dyer & Gregersen, 2012; Kaplan, 2012; Munshi et al., 2005).

Scott McCleod, in his presentation, "Leading the Change: Current leadership Models Are Inadequate for Disruptive Innovations," has the following recommendations for school leaders in K-12, which could easily be applied to higher education:

1. Don't wait until it is good enough—start sooner than is comfortable.
2. Start with underserved student groups.
3. Use different metrics of success.
4. Compete directly with the existing organization (counterintuitive).

Networking

In order to offset the traditional approach to management, leaders must be trained to foster a culture of disruptive growth. They should be willing to mix things up to garner different perspectives. "Innovators are intentional about finding diverse people who are just the opposites of who they are, that they talk to, to get ideas that seriously challenge their own," Gregersen says (2009). In addition to the individual employee characteristics, team composition is one of the cornerstones of disruptive innovation. According to research, cross-functional and diverse teams promote disruptive innovation (Horth & Vehar, 2012). For instance, at Cuyahoga Community College there are dozens of examples of how cross-functional and diverse teams facilitated interaction among individuals that resulted in new ways of seeing things and, consequently, new outcomes. An example of this is analysis of

services for improving students' math performance. New teams formed through efforts such as Achieving the Dream and the Developmental Education Initiative, enabling faculty, staff, and administrators to understand the college's developmental education students differently by learning diverse points of view based on who was contributing to analysis and action planning. New perspectives led to new solutions that are yielding positive results for students. Paramount to survival in an innovative society, organizations must embrace and acquire new individual and team competencies. Therefore, hiring the best employees, creating balanced employee teams, and investing in training and development to foster continuous growth of such teams are key factors in creating an innovative culture.

Lingering Questions

The ideas presented in this discussion are just the beginning of rethinking how institutions can change to help more community college students to succeed. Many more questions will continue to challenge our thinking and shape our outcomes as we embrace new ways of working toward student success and completion.

1. *What major patterns, paradigms, and practices, do we need to release and unlearn to foster a spirit of disruption in our institutions?* What parts of our institutions have become legacies that block our ability to think and act boldly in new directions for our learners? What conversations and actions are necessary to dismantle thinking and behaviors that inhibit our creativity? Who needs to be at the table for this dialogue?
2. *How can we best leverage the big data analytics our systems generate to create predictive models for decision support around student success and completion?* The U.S. STEM model developed by the Business Higher Education Forum may well be the first attempt to apply predictive analytics to the challenge of national degree production. What are the implications for our sector?
3. *In what ways should we consider loosening our structures to facilitate new partnerships that can seamlessly support students as they move through various sectors of K-20 and lifelong learning?* Can we manage the vertical integration required as students progress through our structures and the horizontal integration that would facilitate the collaborative relationships and networks we need to be connected with and responsive to the rapidly changing and emerging labor market needs?

The Disruptive Path

The current climate of rapid change in academia coupled with high market demand for new forms of higher education requires greater flexibility by community colleges to further extend access to high quality learning and ensure that enrolled students become credentialed graduates. In their own words, students lament the hurdles they are required to navigate in our complex and cumbersome systems of assessments, counselors, placements, advisors, and so on (CCSSE, 2012). Their journey to achieve a college degree or other completion credential is often protracted and costly with only the most determined and resourceful successfully

finding their way through mazes of institutional complexity. Financial resources such as student aid are easily diminished in these elongated and often impermeable environments. Disruptive innovation in community colleges could improve student success and completion.

America's community colleges have great potential to meet the demands for education and training in the current era of economic, industry, and educational volatility. What is certain is that change is ubiquitous and ongoing. We must ready ourselves to react to and create change within our institutions. According to Christensen (1997), organizations that don't pay attention to disruptive innovation (1) maintain that their goods and services will always be needed, (2) develop sustaining improvements based on current customers, (3) don't understand the natural laws of disruptive innovation, and (4) fail to spin off an organization in direct competition with itself. These organizations risk becoming obsolete.

A commitment to innovative ways of serving students and changing our institutional cultures to make this happen can enhance our ability to rapidly adapt to learner needs, use alternative credentialing to value the experiences they bring to us, and ultimately engage them in meaningful ways as they work toward completion. We are already seeing the earliest localized signs of customization with the modularized curriculum in developmental math and the opportunity that mobile computing offers. We can foresee a day when the smart phone not only delivers local, customized curriculum, but also accumulates assessment data on the learner that can be used as a tool to validate experience, knowledge, and learning that can be credentialed.

The impact of changes in the nature of credentialing and other disruptions in education will no doubt challenge many traditional parts of academia. Nevertheless, with postsecondary credentials emerging as the new compulsory level of learning, it is part of our civic role to find new and better ways to provide education and training to masses of students. For community colleges, a journey back to the future can remind us of how the spirit of our disruptive and democratic origins might inform our next steps through the 21st century.

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