or most of the past decade, IT leaders in higher education felt on top of things. Challenges were usually comprehensible and addressable, doing reasonable things yielded reasonable results, and for the most part, IT was a substantial contributor to institutional progress. But these days, IT leaders rarely feel on top of things. Instead, some days feel like a game of Calvinball, where everything keeps changing, often without disclosure or recourse: the game, the players, the teams, the rules. Calvinball-like days may not be frequent, but neither are they exceptional, and they seem to be proliferating.

Why is IT ever more complicated and difficult to manage in higher education? What might reverse the trend? These questions beg two more: Was success actually easier before? If so, why?

By Gregory A. Jackson

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Despite some rhetoric to the contrary and a few exceptions, I believe that in the past, management of IT succeeded largely by aligning compartmentalized services to specific dimensions of customers' needs. IT organizations have optimized resources and progress by separating academic from administrative computing, infrastructure from applications, finances from technology, staff from finances, MacOS from Windows, IBM from Sun from Dell from Cisco, development from production, marketing from delivery, and security from academic, administrative, and network services. They have organized and behaved somewhat differently than have non-IT entities within higher education institutions, and IT organizations have defined IT environments and approaches according to the unique culture of their institutions. Similarly, for the past few years IT groups have embraced customer service as a dominant goal and have achieved that goal by categorizing customers and their needs and then serving those sets of customers and needs seriatim. As a result, IT organizations came to emphasize the needs of constituents rather than the capabilities of technology and to train and document in real language rather than in technobabble. IT groups simplified how people got access to and help with technology and worked to understand how clients used and evaluated IT.

Although compartmentalization and customer orientation enabled higher education IT groups to focus, to tailor solutions to problems, to work efficiently, and to meet functional, financial, and delivery goals, the approach seems to be losing effectiveness. Certainly, colleges and universities have become more complex enterprises over the past decade, and well-understood rules have given way to what Jim March called the "garbage-can model" of organizational decision-making and what Hobbes calls "Calvinball." That could explain why traditional approaches are failing.

Instead, I believe that the approaches themselves are faulty, at least as we understand them today. Compartmentalization no longer works, and focusing on customers—at least in the traditional textbook sense—no longer suffices. Satisfying customer expectations through compartmentalized services and activities—in essence a unidirectional process—must give way to engaging customers through convergent services and activities. IT practice and structure does not yet recognize this subtle truth. That, rather than Calvinball, is why success is becoming more difficult. In the next few pages, I will sketch a few sample areas where convergence is playing a growing role and where traditional conceptions of "customer" no longer suffice. Although the examples come mostly from the University of Chicago, that's just for convenience: they have ample counterparts elsewhere. I will conclude
with some suggestions for realigning IT practice in convergent times.

Convergence of Perspectives

In the famous coffee-shop scene from the 1970 movie *Five Easy Pieces*, Bobby (played by Jack Nicholson) is a picky customer trying to order from a waitress (Lorna Thayer) who believes she's following the rules:

_Bobby:_ I have made up my mind. I want a plain omelet, no potatoes on the plate, a side order of wheat toast, and a cup of coffee.

_Waitress:_ I'm sorry, we don't have side orders of toast. I can give you an English muffin or a coffee roll.

_Bobby:_ What do you mean, you don't have side orders of toast? You make sandwiches, don't you?

_Waitress:_ Would you like to talk to the manager?

_Bobby:_ You have bread, don't you, and a toaster of some kind?

_Waitress:_ I don't make the rules.

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_Waitress:_ I don't make the rules.

Now consider two IT snippets that, in juxtaposition, seem remarkably similar to the coffee-shop scene. The first showed up as an e-mail from a University of Chicago graduate student some years back, complaining about the university's reluctance, as a campus with many Mac users, to be early adopters of Microsoft Active Directory:

_You've created a computer system that doesn't work well with the single most popular Internet software in the world. . . . Your strategy for dealing with the inevitable problems such a course of action will cause—forcing users to change their habits and software to suit yours—does not, quite frankly, represent the highest standards of customer service. In fact, it may represent the lowest standard of customer service since communism. I hardly need add that as a business model, it sucks._

And the following draft announcement (fortunately never published) for a training session came from a help-desk staffer:

_In the probably vain hope that the horse will drink if we drag it to the water kicking and screaming, we're rolling out a new program aimed at ignorant muckety-mucks like you. The Executive IT Track gives you the chance to have someone come and show you how to use the Scary Magic Box on your desk (no, not the little one that makes the ringy noise and talks at you—the big one with the funny-looking TV tube and the cup holder) behind closed doors, where no one else will see you make a fool out of yourself._

_These examples are extreme and slightly silly, yet they clearly illustrate very distinct perspectives. The “customer” expects service to be perfectly well delivered, with any problems being the fault of the “customer.”_
collective good. But since colleges and universities house lots of Bobbys and lots of waitresses, getting customer perspectives to converge remains difficult.

Convergence of Applications

Over the past decade, the University of Chicago, like its peers, has automated many paper-workflow processes. The objective of automation is to maximize efficiency, so the obvious starting place is processes with many transactions. Two examples of this are the Registrar’s Office and Central Procurement Services.

University of Chicago students interact with a suite of services called “cMore” (http://cmore.uchicago.edu). This suite enables students to maintain their records, to register for classes, to choose sections, and so forth. cMore is in effect a portal into underlying student systems. From the students’ perspective, convergence is high: one digital key (the network credential, called “CNetID”) unlocks access and authenticates most transactions.

For a different purpose, staff members and faculty interact with an online procurement system called “UCHicago BuySite” (http://buysite.uchicago.edu). BuySite enables staff to search various catalogs (Dell, OfficeMax, Grainger, Fisher Scientific, the internal Campus Computer Stores, and others), to place and track orders through direct “punchout” connections between BuySite and the included vendors, and to issue purchase orders for other vendors. The CNetID enables access and authenticates transactions, which then go through an online approval process.

The university built BuySite and cMore separately. The two systems use the same network credentials for access, but the overlap ends there. Each system has its own infrastructure, databases, connections, and so forth. Although each system sends data to other systems, neither is very well integrated with, for example, the university human-resources system.

Yet it can be important for the procurement system to communicate with the student system, especially now that the former includes scientific supplies. Graduate students often buy supplies, yet their authority to do so and the approval chain probably should be different for them, depending on their discipline—which means the procurement system needs to know who is a student in which department, something that is known only to the student system. Similarly, the registrar sells certain services, such as transcripts, yet this takes place through cMore, which was not designed for e-commerce, rather than through BuySite, which was.

Today the potential convergence of cMore and BuySite would affect their design—even though cMore was developed in-house and BuySite is outsourced to an application service provider (ASP). However, even today’s development and selection processes would only grudgingly accommodate that. This is a clear example of how traditional compartmentalization has become a hindrance, impeding rather than enhancing progress.

Convergence of Data

Most colleges and universities have an online directory, a version of the traditional phonebook. Someone can look up my name in ours (http://phonebook.uchicago.edu) and learn not only my e-mail address but also my campus phone number, my title, my office address, my fax number, and the name of my assistant. The online directory rests on a database. The database contains additional items that are not available to online searchers—for example, my home address and phone number, which are available in the physical phonebook. But the database lacks other items. For example, there are, if I count correctly, eight telephone “numbers” that someone could use to call me: four office landlines, one cell phone, one Skype account, and two home phones. Similarly, I receive e-mail through seven different accounts—three institutional, three personal, and one involving my cell phone—plus two alumni e-mail forwarding addresses, five aliases to my university address, and one special address that distributes to most of the others. There is no place that all of these are recorded together; indeed, the “phonebook” database is almost the only place any e-mail addresses are associated with any phone numbers, and the e-mail database is the only place that records all my university e-mail aliases.

The phonebook and alias databases lack certain other data. Although the phonebook lists my office address, it contains no data on the spaces that are in my building but that are not associated with a person: it can’t, for example, tell me anything about the President’s Office waiting area one floor down from me (even though that space has a phone). There is a space-management database (partially represented at <http://maps.uchicago.edu/campus.shtml>) that contains extensive data on every room in every building on campus, including my office, but that database contains no telephone numbers and no occupants’ names.

Finally, none of the above databases contain data on the organizational relationships among individuals. From the phonebook, one might glean that I share an office suite with the Vice President for Government and Community Affairs, but the phonebook database doesn’t know that this vice president and I both report to the President. A crude database does record hierarchy, at least for senior administration, and that database feeds
an online organizational chart (http://orgchart.uchicago.edu) for the university.

An individual's "directory" attributes fall into different realms: access mechanisms (phone numbers and e-mail addresses), location (office address), domain (title and group), and organization (title, rank, assistant, reporting line). Currently, all of these data exist electronically, and they are all available online, but not together.

Because the underlying databases came into being separately for distinct reasons, building or traversing attribute maps across realms is extremely awkward and difficult. Yet colleges and universities increasingly need these joined attribute maps in order to efficiently manage the institution. A convergent need transforms a compartmentalized data tradition from enabler into obstacle.

**Convergence of Platforms**

Glass houses that once housed distinctive supercomputers and blue IBM mainframes have evolved into utilitarian machine rooms. For the most part, these machine rooms now have strong, well-insulated, opaque walls rather than glass. They may or may not house a mainframe, but they all house closely packed racks with computers, storage, and other devices bolted into them. Thickets of power and network cables interconnect the devices; roaring fans and air conditioners cool them. (Supercomputers look no different, since they are in effect racks packed in particular ways.)

The density of modern machine rooms is a challenge, with their physical convergence generating immense power and thermal loads. But far more daunting is their diversity. College and university machine rooms typically contain servers from three to ten (or more) different vendors running five or more operating systems. Some machines connect to others directly and some through regular networks, with complex firewall configurations regulating flows and providing security for the latter. It's a jungle in there.

In the heyday of the mainframe, convergence was nearly complete: everything ran on one computer, and direct user access was both limited and highly standardized. As machine rooms and user environments diversified, convergence gave way to vertically integrated, silo-like, client-server architectures.

As machine rooms and user environments diversified, convergence gave way to vertically integrated, silo-like, client-server architectures. The resulting diversity among silos has become unmanageable, for reasons ranging from the simple number of servers to the intricacy of support and training requirements. The primary mechanism for reconvergence is virtualization: having one machine emulate several simultaneously. But virtualization is a buzzword and too often simply represents a new kind of silo (i.e., everyone wants their own virtualized environment). Data center convergence must go beyond the buzz.

**Convergence of Networks**

Phone calls initially traveled over copper, and therefore so did early data-network traffic. As glass fiber joined copper, "network convergence" came to mean that a given transmission might use both. In due course, various kinds of radio-frequency multiplexing enabled WiFi data networking and cellular telephony, and the meaning of "network convergence" expanded accordingly.

Up to this point, the three major forms of networking—telephony, data transmission, and broadcast—remained largely separate. This has now changed, in two fundamental ways. First, in the so-called Negroponte Switch, communications that had once been wired, such as telephony and computer networking, became unwired, whereas communications that had once been unwired, such as broadcast radio and television, became wired. Second, and more recently, the physical distinctions among telephone, computer, and broadcast communications have begun to disappear, as “Voice over IP” (VoIP) and “IP Television” (IPTV) are moving all three not only to the same infrastructure but to the same digital signal.

The technological challenges are substantial. Hardening and provisioning a data network to carry VoIP and IPTV with the same responsiveness and robustness as a dedicated telephone or cable-TV system, for example, is both difficult and expensive. The organizational challenges are even more daunting. In most colleges and universities, telephony has been compartmentalized: as a distinct, vertically integrated enterprise within a larger IT unit, as a similarly vertical enterprise in the facilities department or elsewhere outside the central IT unit, or as an entirely outsourced function. Data networking, on the other hand, has often grown out of academic computing. Cultural divergence results: telephone organizations tend to be very formal, even Taylorized; data-networking organizations tend to be much less formal, sometimes even ad hoc.

Moving to VoIP and IPTV requires not only technological change but also a difficult, fundamental recasting of organizational relationships, approaches to customer service, and financing. Network convergence forces compartmentalized telephone activity, with its particular kind of customer relations (so perfectly parodied in the 1967 movie The President’s Analyst), to merge with the typically different culture surrounding data networking (as portrayed in the 1992 movie Sneakers).

**Convergence of Endpoints**

I first wrote this paragraph in my office on the University of Chicago campus. In my office, the computers and software are owned by the university, and they connect to the university network, where they are regulated and protected by university network security and policy. The same goes for my telephone. When something goes wrong—a common occurrence for me—I know which office to call. The
result is either that IT staff make a service visit to my office or that I take the computer to the computer-repair group.

But the geographic distribution of workplaces is expanding from campuses to the world at large. The workplace convergence among office, home, and the road presents several challenges. For example, my desktop computer at home is also owned by the university. However, it connects to my home wireless network, which is provided by equipment that AT&T sold to me as part of the Yahoo! DSL service on my home phone, and I pay for all of that myself. At home, I can’t expect the university help desk to assist when, for example, I can’t connect to Internet sites. If the problem is caused by my computer, eventually the university will fix it, but since university risk-management policies proscribe sending university staff into private homes, I have to bring the computer on campus to have it fixed. If the problem instead involves the wireless access point, I have to diagnose and fix that problem myself. Or if the problem involves the DSL connection, Yahoo! needs to deal with it. Or the problem might be related to the underlying phone connection, which could be an AT&T problem or could mean that our building’s intercom contractor has once again misconfigured the phone wiring in the building. The latter case would make this a building problem, and since I live in a co-op, that would make it partially my problem.

I want the IT components of my working environment to work consistently and with minimum fuss, wherever that environment happens to be. Whereas it once was reasonable to think of office as office, home as home, and hotels and airports as neither, today all these environments converge as workplaces in which IT should work consistently. That they don’t easily converge yields some of the most irate calls and e-mails to college and university IT help desks.

**Convergence of Communities**
The University of Chicago Alumni Association focuses on alumni, the Office of Community Affairs on surrounding neighborhoods and Chicago politics, the Office of Government Relations on most government relations, the student newspaper on students, the University Press on customers and authors, and so on. Each of these offices has managed its communications, with some collaboration in areas such as consistent message and graphical identity.

Like its peers, the University of Chicago has a main Web page. It also has many other sets of “official” Web pages. There are important differences among the “official” sets. For example, one set of pages aimed at alumni, Mind Online (http://mindonline.uchicago.edu), covers many of the same topics as another set of pages aimed at the research community, Research at Chicago (http://research.uchicago.edu/highlights/). But the voice, level, language, and detail in the two sets all vary—even as Web designers take pains to both connect and distinguish the two sets graphically. Although the Web brought diverse communications into a converged technology, compartmentalization has continued within it.

In the early days of the Web, the main University of Chicago page served as the minimally convergent entry point for anyone who did not know how to find the right channel. Then came search engines, which brought audiences into the university’s Web space in endlessly evolving and unmanaged ways. It was no longer possible to proceed as though Web pages intended for alumni would primarily serve that constituency, since an online research-oriented visitor might land on an alumni-oriented page through a keyword search on Google rather than a guided path from the main university page.

The Web-driven convergence of access exposes inconsistencies in the messages that colleges and universities deliver. Most institutions are neither willing nor organized to discuss, choose, or enforce a common message. In addition, higher education prides itself on academic freedom, eschews mechanisms and policies that restrict that freedom, and therefore houses wide-ranging discussions—only some of which align with institutional communications goals. Since discussions often take place online, they inevitably find their way to various audiences in ways that the institution cannot control. The outcome can be garbled institutional communications. Partly as a result, access convergence prompts not only mechanisms to prevent unintended access to nonofficial material but also disputes over control of those mechanisms. A frequent ancillary effect is competition for control of the institution’s main Web page. Clever technologies may someday mitigate these problems, but for the moment they remain unsolved.

Exacerbating these central problems are unofficial communications that only partially, if at all, involve the college or university community proper. The issue in these cases is whether a given line of communication is appropriate to the college or university channel. For example, the University of Chicago has a radio station, WHPK (http://whpk.uchicago.edu/). Formally, this is a student activity, but in fact much of its programming (which is eclectic, unique, and wonderful) is chosen and presented by “outsiders.” These are individuals who have long been
Skill sets are no longer clearly identified with only certain kinds of jobs: compartments are giving way to convergence.

associated with the station but who have no formal connection—and therefore no formal responsibility—to the university. WHPK transmits with low power, which limits its audience. To broaden its audience, the station wants to stream its programming over the Web. A question arises: given that much of the programming is neither by members of the university community nor under university control, should the university host the webcast?

Similarly, the 57th Street Art Fair (http://57thstreetartfair.org), the oldest continuously operating judged art fair in the Midwest, takes place on the streets just east of the University of Chicago each June. The fair has no official connection with the university and prides itself on its independence. However, the fair coincides with the university’s reunion weekend; it is heavily patronized by university faculty and staff, and there are obvious synergies to be had from these coincidences. Questions arise: Should the university promote the 57th Street Art Fair on its central Web site? Should the university host the fair’s Web site, if asked?

Convergences among communities and communication channels became challenges without any change in communities. Rather, a highly convergent medium—the Web—is replacing print, e-mail, and other more addressable mechanisms. In this case, the technology causes the problem it must solve.

Convergence of Cultures
A recent job posting included the following requirements: "Program Coordinator, Master of Arts Program in the Humanities: . . . familiarity with a Mac computer; experience with standard computer programs (e.g., Microsoft Office Word, Excel, standard e-mail and Internet applications); experience with FileMaker Pro and Dreamweaver." Up through "standard e-mail and Internet applications," this could have been posted anytime in the last two decades or so without raising eyebrows. But until recently, the next qualification—experience with FileMaker Pro and Dreamweaver—would have belonged in an IT job description, not here. This is an important trend. Skill sets are no longer clearly identified with only certain kinds of jobs: compartments are giving way to convergence. Handled well, this kind of convergence both enriches jobs and distributes expertise. Handled poorly, it leads to bad use of IT, wasting the time of both program coordinators and IT staff.

The issue involves more than a simple blurring between IT and non-IT roles and cultures. Carol Barone once portrayed herself wobbling on a bicycle as she threaded her way between two members of her staff at UC-Davis, where she was CIO. One staffer was neatly groomed in a suit, white shirt, and tie fully appropriate to the IBM or FBI of the time. The other staffer wore jeans, a T-shirt, hair to his shoulders, and (if I recall correctly) a beard and a cap. Barone emphasized two points: first, that an IT leader needed to manage these two staffer in very different ways, since clearly there expectations of the organizational culture were different, and second, that it was dangerous to assume, as we in the audience all did, that the first staffer worked in the data center and the second in networking. Since the two cultures that Barone identified still exist today, her points remain valid.

One of these two cultures emphasizes central control, enforced homogeneity, extensive standards, and hierarchical authority. The representative for this culture might well be Steve Ballmer, the exceptionally talented and forceful CEO of Microsoft. The other culture emphasizes individual achievement, distributed control, voluntary standards no more extensive than strictly necessary, collective responsibility, and minimal authority. Richard Stallman, the immensely influential and free-thinking MacArthur Fellow behind Emacs, the GNU Project, and the Free Software Foundation, could well be the representative for this culture.

The gulf between these two cultures—as well as the appearance and behavior of their members—is mirrored in a parallel gulf between software cultures. The current feints and jabs between Microsoft and the open-source community are not simply stylistic or symbolic; they herald very different ways to think about software. Unfortunately, as Barone said, few colleges and universities can simply choose one culture and move forward. For various reasons, some defensible and some not, most institutions not only employ staff representing both cultures, requiring all the management challenges and delicate balancing that Barone described in her presentation, but also deploy IT environments dependent on the products of both cultures. “Corporate” software and “open-source” software, to use belabored and oversimplistic shorthand, converge in a functionally and culturally heterogeneous suite of services.

Convergence of Institutions
Colleges and universities rarely compete on the basis of their IT, except in certain advanced research domains and in computer science itself. It therefore makes sense to take the next step and collaborate across institutional boundaries outside the competitive areas. There were some early efforts in this respect decades ago, but these came into particularly sharp focus with the advent of Internet2 (http://
www.internet2.edu/), a major multi-institutional effort to acquire networking capacity interconnecting its members and to manage that capacity collectively. Internet2 has been a great success. It has also grown very large and diversified, becoming less convergent in the process and indirectly prompting a competing effort, National LambdaRail (http://www.nlr.net/). Where high-performance networking is concerned, higher education acts as a converged unit (or, to be fair, dyad) rather than as thousands of separate colleges and universities. Despite the Internet2/NLR divergence, which many of us have been working to end (with some success, if recent trends hold up), networking is where convergence has been both most intentional and most successful.

Convergence has been slower in other areas, ones where progress might have been expected. As I write this, for example, the Recording Industry Association of America (http://www.riaa.com/) is proposing to sue students and perhaps their institutions for failing to stem “music piracy.” Rather than join ranks to frame, implement, and defend a reasonable set of solutions to the very real problem that the RIAA is attacking, colleges and universities have variously split into bickering groups or simply tried to duck: some institutional presidents side with the RIAA, and others criticize it; some institutions lock down networks, and others approach the issue educationally; and in general, higher education is allowing the recording and movie industries to gain greater and greater authority over how campuses manage their networks. Had higher education converged around a common approach, the situation might be much less dire.

Efforts in collective application development, another potentially fertile field for convergence, have netted a mixed bag of results. Some efforts, such as Sakai (http://sakaiproject.org), which involves instructional management systems, seem to have reached critical mass and to be headed for success. Others, such as various middleware projects and the administrative systems counterpart to Sakai, called Kuali (http://kuali.org/), have not progressed as far.

Full IT convergence among institutions will never happen. In part, this is because colleges and universities insist on idiosyncratic processes that impede standardization, and in part, this is because research IT—as opposed to instructional or administrative IT—can be a valid basis for competition among higher education institutions.

Convergence of Providers
Buying from many different vendors causes all kinds of problems: finger-pointing when things go wrong, integration challenges, awkward support, and a nagging sense that spreading procurement around impedes economies of scale. If an institution could channel more of its purchases to a smaller set of providers, one argument runs, it could tackle all of these problems. Convergent procurement should therefore be preferable to compartmentalized procurement.

Dealing with multiple vendors for a product does have a key advantage: the vendors compete with one another, and this drives prices down. But driving prices down also drives down revenues to vendors, and shrinking revenues constrain service and/or deter vendors. The set of vendors contracts, either through mergers or otherwise. The merged vendors can compete more aggressively, since they pass along economies of scale, but the trend is discontinuous: when only one vendor is left, competition vanishes and customers lose leverage.

Over the past few years, there have been extensive mergers among key providers to higher education. Four particularly notable examples are AT&T (the merger of several regional Bell operating companies plus a few other companies), Oracle (which absorbed PeopleSoft, one of its two principal competitors in the administrative systems market), Hewlett-Packard (which absorbed Compaq, which had absorbed Digital Equipment Corporation), and Blackboard (which absorbed WebCT, its principal competitor.
in the instructional management systems market).

The issue here is that institutions tend to benefit from provider convergence right up until they don't. And it's hard to tell when that reversal is imminent. A parallel trend—the emergence of companies that want to manage convergence, including freestanding firms such as CDW and expanding manufacturers such as Dell—promises similar challenges.

**Compartments, Customers, or Convergence?**
For those of us in higher education IT, convergence permeates our work more and more each day—sometimes at our instigation, sometimes to our benefit, and sometimes neither. Any IT organization or manager seeking old-style progress through compartmentalization is doomed: institutions no longer direct or evaluate IT that way. Traditional conceptions of customer-centered management are similarly doomed, unless they somehow close the feedback loop by connecting customers’ expectations and satisfaction to budget allocations and vice versa.

When I face a management problem—no matter the problem—the same two solutions always occur to me: bribery and conspiracy. By “bribery,” I mean that we should try to make it easier for people (or entities) to do what we want them to do rather than what they otherwise might do. Influencing free choice has few negatives, we teach here at the University of Chicago, whereas constraining free choice has many. By “conspiracy,” I mean that we should, wherever possible, find common ground with those whose activities engage or affect our own. The key, in each case, is having the ability and willingness to view controversy through the other party’s eyes.

Those of us who manage IT in higher education need to rethink our historical emphasis on compartmentalization, be it within or around IT, and to reframe our notion of customer to recognize its non-traditional, ambiguous form in higher education. For this to work, IT staff need to understand that old ways must give way to new, and campus communities need to understand why IT services and demands seem so much more complicated and interconnected.

Inculcating new thinking into staff requires organizational development of a particularly delicate sort: it needs to emphasize more extensive connectivity, which will come across as added constraints on individual achievement, at the same time that it emphasizes more creative thinking, which will come across as antithetical to interconnected management. This will take time, and time is a scarce resource. The challenge is to find ways to make spending this time more attractive to staff and management than not doing so.

Bringing customers along requires something much more traditional: marketing, defined as an iterative process designed simultaneously to improve communication about services to target audiences and to improve communication about target audiences to service providers. The nuance is this: whereas until now IT marketing has largely been compartmentalized, if IT is going to market convergence, then the goal must be to communicate precisely that.

Sometimes customers see convergence where providers see compartments, and sometimes the converse is true. Unless colleges, universities, and their IT groups address all three elements of this triad at once—engaging customers, debunking compartments, exploring convergence—they will be right back in the coffee shop with Bobby and the waitress.

**Waitress** (sarcastically): One Number Two, and a chicken salad sandwich on wheat toast—no butter, no mayonnaise, no lettuce—and a cup of coffee. Anything else? **Bobby**: Now all you have to do is hold the chicken, bring me the toast, charge me for the sandwich, and you haven't broken any rules.

**Waitress**: You want me to hold the chicken.

**Bobby**: Yeah. I want you to hold it between your knees.

**Waitress**: You see that sign, sir? You'll all have to leave. I'm not taking any more of your smartness and your sarcasm!

**Bobby**: You see this sign? (Bobby sweeps his arm across the table, knocking everything to the floor, and his group leaves.)

Bobby thinks he's won. The waitress thinks she's won. But Bobby's group hasn't eaten, the waitress has no tip, and there's water and ice and broken glass all over the floor. Everyone has lost. Because they retreated into their compartmentalized perspectives and chose divergent strategies, rather than engaging each other, no one gained anything, and there was no progress. That's the risk higher education IT leaders take if we don't, as Apple used to put it, “think different” about the broad challenges that convergence brings to our collective enterprise.

**Notes**