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Leveraging Service Blueprinting to Rethink Higher Education

When Students Become 'Valued Customers,' Everybody Wins

Amy L. Ostrom, Mary Jo Bitner, and Kevin A. Burkhard October 2011

Center for American Progress



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Introduction and summary

There is much discussion today about the need to transform higher education. Experts and researchers list numerous challenges: low student retention and graduation rates, the increasing cost of higher education, and concerns that graduates don't possess the skills required to compete successfully in today's interconnected, global marketplace. Less than 60 percent of students who enter four-year institutions in the United States earn a degree within six years and the graduation rate at many institutions is much lower than that.¹

Nontraditional students,² who currently outnumber traditional undergraduate students, can face significant structural barriers to degree completion that can cost them additional time and money during their pursuit of a degree.³ In fact, college can be a financial burden for all types of students. Those graduating in 2009 had, on average, student loan debt totaling \$24,000.⁴

Although recent research provides evidence of the positive outcomes, financial and otherwise, that come from earning a college degree, other evidence suggests that a substantial number of students are not making sufficient gains in fundamental skills such as critical thinking and written communication while in college.⁵ Further, some of the cross-disciplinary skills and knowledge demanded in today's economy are often missing in traditional, discipline-based degree programs. This may leave many students who do complete degrees without the skills necessary to compete successfully for jobs upon graduation and in the future.

These are just a few of the issues facing higher education that point to the need for new thinking and innovative approaches. Although advances in technology and online learning have the potential to help address some of these concerns and challenges, technology itself is not the answer. Technology is just one component in the needed service system redesign effort—public policy must also be reshaped. We believe a key to the solution to many of the issues lies in designing and delivering student-focused educational experiences that meet their needs and desired outcomes while concurrently considering the needs of other stakeholders such as employers, government, and society more broadly.

In this paper we take the position that higher education is a service, or a service system, and that transformative initiatives aiming to address the types of problems noted earlier will benefit from viewing them through a service lens.⁶ A service lens puts the customer at the center of improvement and innovation initiatives, considers the customer experience to be a foundation for analyzing and making enhancements, and assumes the customer is a co-creator of value.⁷

In the context of higher education, this means that the student is the center, the student's experience is the foundation for analysis, and the student is a co-creator of his or her educational experience and ultimately the value received. Although we are not the first to discuss higher education from this perspective,⁸ we believe there are many benefits that could accrue from such a perspective being more widely adopted and implemented within higher education. Viewing students as customers has a charged history in higher education but as the economy has become more service dominant, it can be beneficial to use what we have learned studying other services to help improve higher education.

By approaching higher education through a service lens, using service management and service science perspectives, we argue that higher education improvements and innovations should be driven by focusing on students as customers. In doing so, the student experience becomes the central focus upon which the structure, capabilities, and resources of higher education institutions are brought to bear and aligned. This is a significant shift, as it takes us from the idea of students navigating an often complex and fragmented higher education system to the idea of the higher education system being integrated and aligned to deliver the best experience for its students.

Although we acknowledge higher education has many customers and stakeholders (future employers, government, society),⁹ given students' position as the focus of the service and the target of the transformation through knowledge acquisition, students need to be at the core of higher education reform. To move in this direction, tools and techniques shown to facilitate customer-focused improvement and innovation should be applied in higher education in order to successfully develop and implement positive change in the student experience and outcomes.

We focus on one specific technique, service blueprinting, which facilitates collaboration among key contributors and stakeholders involved across a broad customer experience to create a visual depiction, or blueprint, of a service. The service blueprint highlights the steps in the process, the points of contact that take place, and

the physical evidence that exists from the customer’s point of view. Whether the technique is being used to examine existing services or to develop new ones, the discussions that occur during blueprinting have the potential to improve services or conceptualize services in important ways. In the paper we introduce the philosophy that underlies service blueprinting and then describe the technique itself and how it has been used in practice.

We believe service blueprinting can help university leaders and employees redesign, reinvent, and reimagine their educational offerings and service processes from the student’s point of view. There are many grant-funded initiatives focused on improving higher education but it is important to ask whether the changes proposed will improve or worsen the student experience and outcomes. Do the changes eliminate current “pain points,” which are moments during the service that customers or university employees perceive to be annoying, challenging, or dissatisfying, or do they create new ones? Do the changes lead to innovative and sustainable educational models or just reinforce the existing ones? Do multiple initiatives work at cross-purposes and not align with the student experience? Could further discussion and insights with stakeholders help improve how the problems and proposed changes are conceptualized or implemented?

Our intent with this paper is not to provide specific solutions to the problems facing higher education today but rather to spotlight an easy-to-use yet powerful technique that has the ability to help examine, improve, innovate, and transform higher education. Although we believe the technique can be useful to all types of educational institutions, in this paper we focus specifically on four-year public institutions of higher education in the United States. We provide two case studies that highlight how blueprinting can be used to improve and redesign services.

The first focuses on using blueprinting to redesign a course from a traditional face-to-face format to an online/hybrid format in order to reduce or eliminate student pain points and improve student outcomes. The second case study shows how blueprinting could be used to examine and identify problem areas related to the financial aid process with the goal of then finding ways to enhance the experience for students. In addition, we provide a series of examples of how service blueprinting could be used to help public higher education institutions successfully improve and innovate their service offerings and processes from the student perspective.

A number of recommendations for both state and federal policymakers flow from examining higher education through a service lens and from the service blueprint-

By approaching higher education through a service lens, we argue that higher education improvements and innovations should be driven by focusing on students as customers.

ing philosophy and technique. At the state level, policymakers could use service blueprinting to advance the following policy initiatives, among others:

- **Facilitate statewide policy development and best practice sharing within and across universities.** Service blueprinting could be used to share best practices and develop process improvements around critical student experiences such as advising and credit transfer.
- **Online graduation maps for every student.** Blueprinting the student experience from application to graduation could serve as the basis for developing an online planning tool or graduation map. The map could help students track their progress toward graduation and provide easy access to information that could help them in their pursuit of a degree.

At the federal level, policymakers could promote service blueprinting through policy initiatives such as:

- **Competitive grants to promote innovation.** Federally funded, innovative service blueprinting projects could identify best practices for a host of university service offerings such as financial aid, faculty advising, and online learning.
- **A research agency for education policy.** The Department of Education could create an Advanced Research Projects Agency for Education, or ARPA-ED, that would serve as a repository of research findings and best practices for implementing innovative higher education policies, including useful innovation techniques such as service blueprinting.
- **An internal service blueprint of federal outreach efforts.** Service blueprinting could be used to examine the federal government's outreach efforts to make sure they meet the needs of students and families. It could also be used to make sure the ARPA-ED's research findings are accessible to students, researchers, and policymakers.
- **Link federal financial aid to student-focused performance measurements.** Federal policymakers could shift financial incentives away from focusing solely on student enrollment to rewarding universities for reducing student problem areas that hinder graduation and for student completion. Service blueprinting could be used to identify issues that arise during the educational process that impede graduation.

- **Exit interviews of degree-seeking students who leave school without a degree.**

Exit interviews with students who withdraw could be required for full payment of a student's Pell Grant and used to identify student problem areas. Having a standard exit interview template across universities would enable comparability of the findings. Frequently identified problem areas for students could be the focus of service blueprinting efforts to reduce or eliminate them as part of the student experience.

- **Improve accreditation standards for schools by including service blueprinting as a required institutional practice.**

Accrediting agencies could be required to examine institutional blueprints as part of the accreditation process. Examining blueprints, along with students' perceptions of service quality and measures of student satisfaction, can help accrediting agencies promote greater institutional quality for students.

Public policy influences all aspects of higher education. Therefore, policy decisions should be examined based on the effect they will have on all key stakeholders including students at the core. To get a complete perspective, we believe it is important for policymakers at the state and federal levels to employ and integrate various techniques and tools. To understand the student perspective, we encourage public policymakers to embrace a service lens and service innovation techniques such as service blueprinting as they can lead to important innovations in higher education that might otherwise be overlooked.

The service lens

Students as customers and co-creators of educational value

Why is it important to view higher education through a service lens? How would things be different for institutions, faculty, and students? What new tools and techniques would be needed to manage in a world where higher education is viewed as a service and students are viewed as co-creators of educational value? What would it mean if higher education services were designed and delivered as comprehensive experiences focused on meeting student and societal needs and driving student success? How could service blueprinting serve as the foundation for the service lens and for viewing higher education offerings as service processes?

To address these fundamental questions, we first discuss what we mean by services and the service lens and then we focus on the implications for higher education, including using service blueprinting as a foundational technique to support implementation of the service lens.

Services dominate the economies of the world's most advanced nations, including the United States. In fact, traditional industry classification data reveal that in the United States approximately 80 percent of our GDP is generated by services and 80 percent of our labor force is employed in service jobs.¹⁰ Let's clarify what we mean by "service" and "services." While definitions vary, we ascribe to a very broad view that suggests services are "deeds, processes, and performances" (or groupings of them) that are provided in "exchange relationships" among organizations and individuals.¹¹ Examples include educational services, health care services, financial services, transportation services, professional services, hospitality services, and retail services.

Some have referred to the major groupings or constellations of services as "service systems." Globally, education is a \$1.36 trillion service system, 1 of 11 that together form a system of systems that account for 100 percent of the worldwide GDP.¹² The inefficiencies in the education service system are estimated to be greater than 35 percent, making education one of the most inefficient of these macro service systems.¹³

It is thought that improvements can be made to reduce the inefficiencies in education by almost 30 percent.¹⁴ In the United States alone, more than 3 percent of the GDP is focused on higher education.¹⁵

Given the importance of higher education for the U.S. economy, and in the lives of students, serious attention focused on improving and innovating our current system is critical. Efforts to transform education must view this sector as a primary driver of innovation and a source of talent and skills that will be at the heart of future global competitiveness and the well-being of society.

Even with high unemployment in the United States today, employers still indicate it is challenging to find employees with the right skills.¹⁶ Higher education will play a critical role in increasing the skills of the unemployed as well as doing research, often in conjunction with students, which will lead to new ventures and businesses being launched, also propelling the U.S. economy forward. The work required to transform education will need to touch every aspect of the service system, including people, processes, and technologies. Viewing higher education through a service lens is, we believe, one of the key ingredients for accomplishing needed innovation and change.

Despite the dominance of services in the world's economies, most industries and institutions still view themselves through a goods-producing lens. A goods lens views offerings (whether goods or services) as entities that are designed, produced, and sold to customers with little input or involvement from the customer. The value of the offering is in the thing that is produced rather than in the experience or the usefulness of the thing. Viewed through a goods lens, the value of a car is the physical car itself, rather than the transportation and mobility services it provides, and the value of a bar of soap is the tangible piece of soap itself, rather than the cleanliness service it provides.¹⁷

Viewed through a goods lens or goods logic, higher education is a set of degrees and programs produced and offered to students by institutions and faculty. The value is in the degrees and programs themselves, and these are offered to students who are fortunate enough to qualify to buy them. In turn, students are often viewed as “products” of the educational process, as if they were the output of a manufacturing assembly line. Health care viewed through a goods lens or logic is a combination of diagnoses and treatments that are produced by health providers and offered to patients, with little input from the patient. A healthy patient in this view is a “product” of the health care system. It is clear, in our modern world, that students, patients, and other groups of customers are demanding engagement and involvement that is forcing institutions to move outside their goods-producing comfort zones.

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What changes when we view offerings through a service lens as opposed to a goods-producing lens? We begin by looking at the “value in use” rather than the value inherent in the physical good or the thing itself.¹⁸ The notion of value in use is that value exists or comes into being only through use or experience, and that there is no inherent value in any offering, independent of its use. This service logic can be applied to physical products such as the car or the bar of soap if we consider the true value of the thing being transportation or cleanliness, respectively, rather than the value of the tangible object. When providers begin to view what they do through a service lens, they start to see their offering as a process that engages and involves the customer as a co-creator of value and an integral part of the service outcome. When financial service providers start to view what they do in this way, they ask their customers, “What is your goal or need?” and “How can I help you?” as opposed to “Here are our financial products. Which one do you want?”

What happens if we view higher education through this service lens or service logic? We know education cannot be produced and delivered on a platter for someone to consume. Students have integral roles to play in experiencing and co-creating the full value of the service. They need to attend class or go online to gain information, engage with course material, interact with classmates and the professor, prepare assignments, take exams, and apply their new learning through projects. Viewing higher education through a service lens will cause us to think about the true value perceived by the student, how that value is co-created, what the role of the student is, and what comprehensive set of processes and innovations might complement and support the co-creation of value for students. We will start to ask questions like “What is your goal or need?” and “How can we help?” rather than “Here are our degree programs. Which one do you want?” We will start to think about designing processes and experiences that will allow students to solve their problems, achieve their goals, and co-create long-term educational value for themselves and society. This approach can apply across students. If students come to us unprepared, we will start to ask what services and experiences could be provided to prepare them better, instead of blaming them for not performing. If students come fully prepared, we can start to identify new and innovative ways to add even greater value to their educational experience.

We believe that viewing higher education through a service lens, or using service logic, is one essential way to move forward. From a practical perspective, service logic is reflected in the approaches, tools, and techniques of service marketing and service management, well-established business disciplines that have evolved over the last 40 years.¹⁹ A service lens and the management practices and techniques that support it suggest that the central purpose of any organization is to offer value propositions and co-create value with its customers.²⁰

In order to do this effectively, the customer's perspective must be integrated into every organizational decision, starting with identifying needs and expectations and continuing through service design, standard setting, delivery and execution, and finally service communication.²¹ In the case of higher education, we believe the primary customer is the student, and value is co-created by institutions together with students and other social actors. Understanding student (and societal) needs, designing systems and experiences to meet those needs, and ultimately delivering and co-creating value is the essence of a service logic applied to higher education.

Viewed through a service lens, the role of administrators, educators, policymakers, and managers is to facilitate educational value co-creation that is designed around and delivered through student experiences. The end goals for the student should be consonant with the end goals of society, yet no value will be created for society or for the student unless the student experience is effective, efficient, and supportive of these desired outcomes.

A key premise of service logic or lens is that the basis of business is reciprocal value creation for those involved and that service is the “application of competences for the benefit of another” and is the main process for value creation.²² From the perspective of customers, service is all about being able to use resources in a way that creates value.²³ Rather than higher education institutions delivering value to students, “value is always uniquely and both experientially and contextually perceived and determined by the customer (student),” and value accumulates “throughout the customer’s (students’) value-creating process.”²⁴ Hence the value of higher education is perceived by students during their educational experience and when they put what they have learned to use. It is not simply about the outcome of getting a degree but also the process or experience by which the outcome is achieved as well as the usefulness of the degree, post-graduation.

This service logic highlights the fact that institutions of higher education, through direct interaction, are co-creating value with students. An institution of higher education can offer value propositions and can work to “directly and actively influence its customers’ (students’) value creation,”²⁵ but it cannot do it separately from students. The two are intimately and inextricably linked. Higher education is not about the production and delivery of education but about designing processes and experiences that provide opportunities for students to co-create value and that help facilitate student value creation in positive ways.

Although the ultimate goals of higher education must be based on broader societal needs, it is students who determine the value of educational offerings and opportunities. Much of the value perceived by students comes from how the knowledge and skills they have obtained are valued in the workplace. Hence the perceptions of employers are still important and very relevant. In addition, for learning outcomes to occur requires active effort on the part of students. Students have a significant role to play throughout many of the numerous service processes that make up their higher education experience.

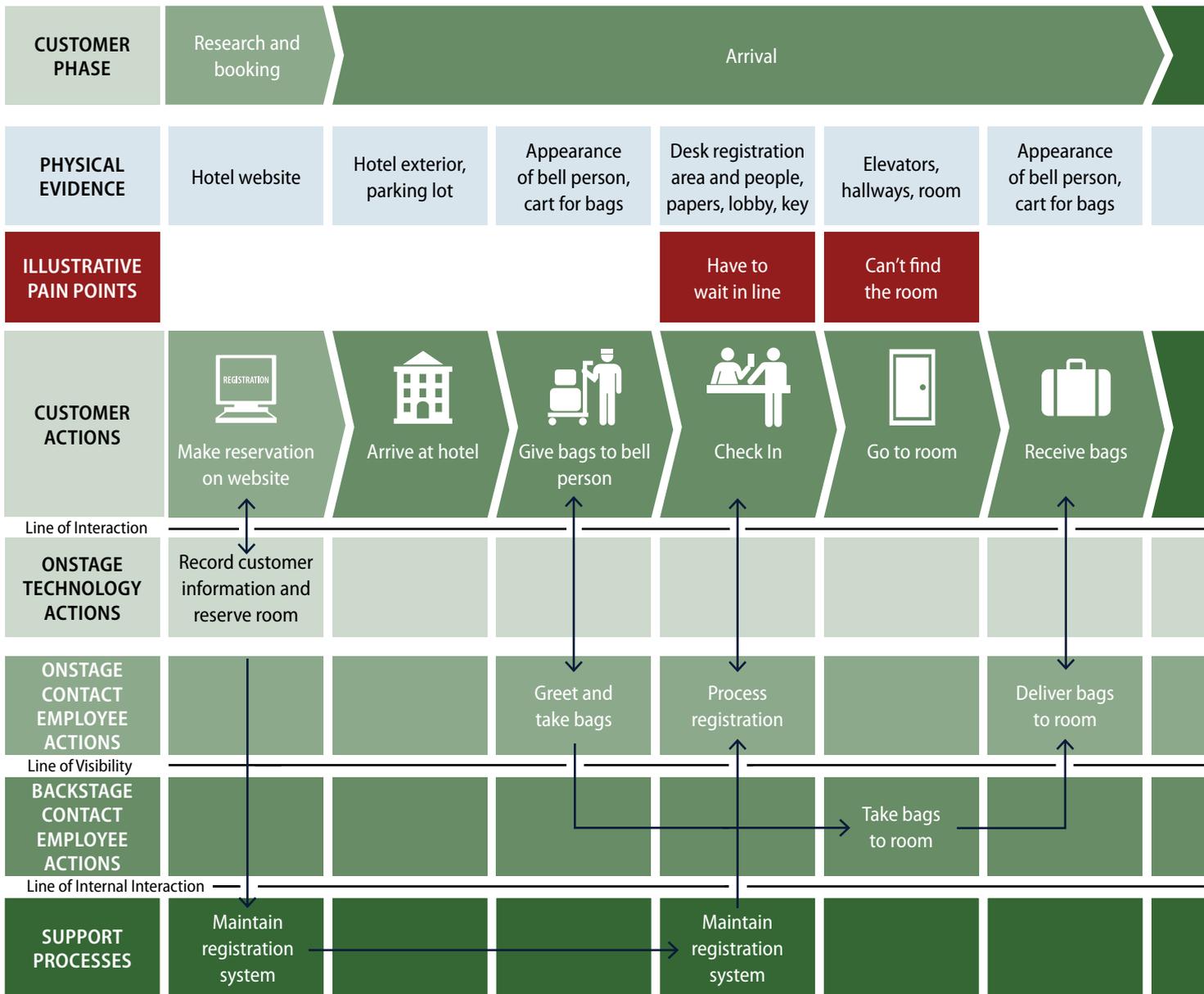
If students do not clearly understand their role, do not perceive value in their participation, or are not motivated to do their role, then it significantly reduces the positive outcomes of the educational experience for the students and for society at large. The onus is on higher education institutions and the systems that support them to ensure the students are put in the best position to be successful in co-creating value and that other key stakeholders, including employers, place a priority on the value being co-created by the students.

Service improvement and innovation in higher education must focus on the student perspective while still taking into account the goals of employers, society, and other stakeholders as well as financial and other constraints that exist. The service lens allows decision makers to view the service and potential enhancements to the service from an integrated student, institution, community, and society perspective.

In the following sections, we identify one key technique—service blueprinting—that can serve as a foundation for incorporating a service lens into any organization. We focus here on its usefulness as a transformational technique for higher education.

For ease of understanding, we present a simplified service blueprint of an overnight hotel stay in Figure 1 to preview the outcome of using this technique. Although a blueprint of a hotel stay could go into significantly more detail at every level, this concept blueprint demonstrates how a blueprint can visually capture the key aspects of a service. Central to understanding the blueprint is to note that the customer's experience is the focus and that the steps involved in that experience are shown chronologically in time, from left to right, across the top of the blueprint in the customer actions row. Everything else in the blueprint is anchored on and supports this experience. In the subsequent sections of the paper, we develop the blueprinting technique in detail and present specific examples of blueprinting as it applies to higher education.

FIGURE 1
Overnight hotel stay service blueprint

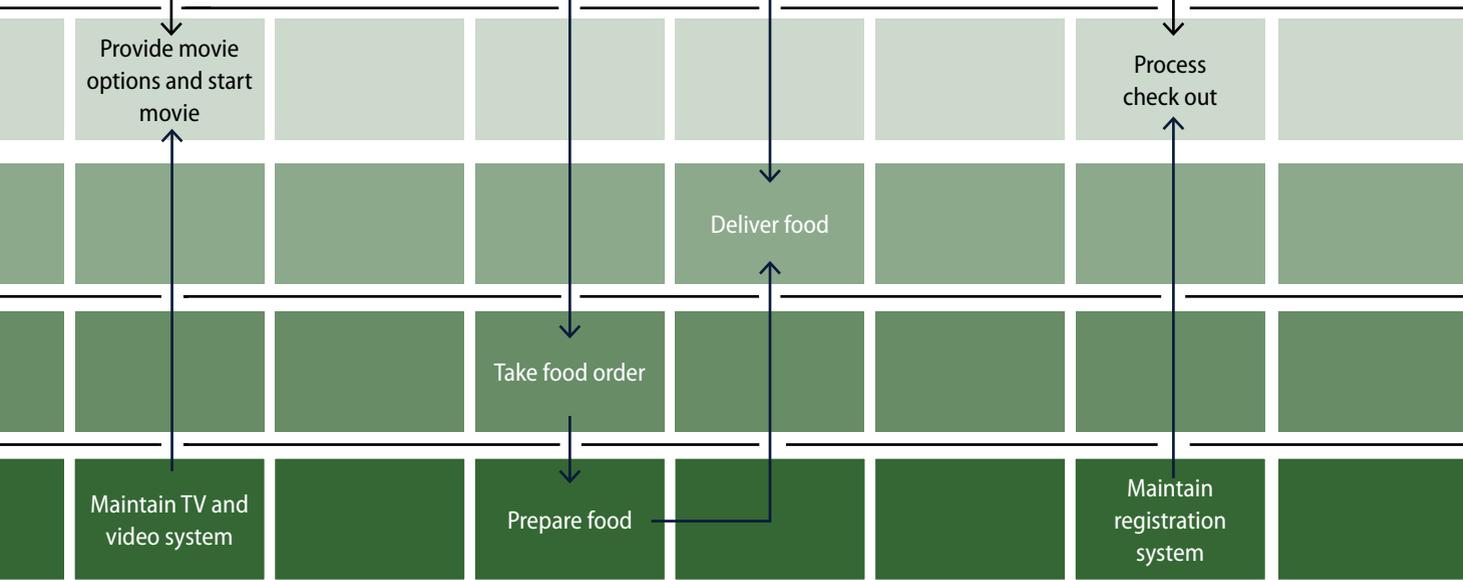


↑ ↓ Indicates interaction between customer and the organization's people and technology

Stay Checkout and departure

TV and remote	Room, amenities, bath room	Menu, phone	Delivery tray, food, appearance of delivery person	Delivery tray, food	TV and remote	Hotel lobby, exterior, parking lot
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Don't understand check out procedures



Service blueprinting

A philosophy and technique for designing services from the customer's point of view

The need for tools and techniques that promote and facilitate service improvement and innovation is compelling. There is strong interest across diverse organizations in figuring out ways to effectively and efficiently enhance and develop services as well as to create memorable and meaningful customer experiences that firmly tie customers to the organization.²⁶

Historically, however, there has been a strong focus on tangible product innovation and little appreciation for the value of services. The result of this focus has been less attention devoted to developing definitive, tested, and sophisticated tools and techniques directed at service improvement and innovation.²⁷ One straightforward but powerful technique being more widely adopted, initially by for-profit organizations but increasingly by nonprofit organizations, is service blueprinting.

Service blueprinting is a simple-to-learn “process modeling” approach that facilitates collaboration among key stakeholders and contributors. It involves bringing these individuals from potentially diverse groups within the organization together in a room around a common externally focused technique to discuss how the organization is delivering, and should deliver, its services. The outcome of this collaborative process is the creation of a visual depiction or map of the service that highlights steps in the process, points of contact that take place between customers and employees and among employees, and physical evidence of the quality of the service that exists from the customer's point of view. The key distinction of a service blueprint from other process-mapping techniques is its anchoring on the customer and his or her experience.

The basic premise of the service blueprinting technique was introduced in a *Harvard Business Review* article by G. Lynn Shostack in 1984.²⁸ The technique has significantly evolved since then. Adaptations have occurred in terms of what is

captured on a service blueprint as well as the process by which the blueprints are developed. Knowledge about the service blueprinting technique is shared widely with undergraduate and graduate students taking courses in service marketing and service operations at universities in the United States and abroad.²⁹ We see a tremendous opportunity to put service blueprinting to use in institutions of higher education so they can gain some of the benefits that we have observed working with a variety of for-profit and nonprofit organizations in other industries.

Our perspective and expertise comes from sharing service blueprinting with thousands of university students, executives, leaders, and employees and helping them apply the technique to their own situations.³⁰ In addition to teaching the technique, we continue to find ways to develop and enhance the technique so it better serves the needs of those looking to improve their customers' experience.³¹

Service blueprinting as a philosophy

Before describing the technique in detail, we would like to highlight what we refer to as the service blueprinting philosophy. It is a set of beliefs that form the basis for the service blueprinting technique. As these beliefs are important to the technique itself and not necessarily held widely within institutions of higher education, we will highlight them and some higher education challenges associated with them:

- The customer is the primary focus.
- Customers view services as broad, end-to-end experiences.
- Key organizational participants and stakeholders should have a clear understanding of the entire customer experience and provide input for service improvement and innovation.
- Organizations need visual depictions or maps because it is difficult to describe, conceptualize, and communicate customer experiences or service processes when relying on words alone.

Let's examine each of these challenges in turn.

Customer is the primary focus

The central premise of service blueprinting, and what distinguishes this approach from many others, is that the customer perspective is of primary importance when considering service improvements or service innovation. This means it is necessary to have a sophisticated understanding of your customers and how they experience and want to experience your service. The customer for a particular service could be an external customer such as a student or an internal customer such as an employee. For institutions of higher education, the focus for a specific service could be on undergraduate students, graduate students, faculty, or staff, all of whom are customers of service processes that are in place in higher education.

This customer focus is counter to the way many higher education institutions have traditionally thought and operated. Broadly speaking, they have placed the primary focus internally on academic disciplines, which can create issues when students' needs and expectations do not fit neatly within the existing structure. This may become more problematic over time, given the growing diversity in student populations. For example, the majority of current undergraduates meet the definition of a nontraditional student, rather than being an 18- to 22-year-old student who attends college full time.³² This growth in student diversity will cause a greater divide with a "one size fits all" model.

Customers view services as broad, end-to-end experiences

When we begin to think about services from the viewpoint of customers, it is important to consider how they perceive their experience with an organization. Although the service or services may be delivered by multiple units or groups within an organization or multiple organizations, from the point of view of customers, it is a single experience that they associate with the focal organization and the brand. This integrated perspective is counter to the way many higher education institutions have been built and operate. For clarity of roles and efficiency in operation, higher education institutions are made up of various units and departments focused on their specific part of the process, with often little integration or understanding of the other parts.

Similarly, many services that customers receive are often composed of numerous service encounters where they interact with the organization. All of the individual service encounters play a role in impacting customers' overall service experience

Customer focus is counter to the way many higher education institutions have traditionally thought and operated.

with an organization. Students engage in thousands of service encounters with a university as part of the larger higher education service experience that begins when they first contact the university and continues beyond graduation.

This vertically strong organizational structure and the sheer number of service encounters that take place can lead to gaps in service and disconnects that are experienced by students who view and experience higher education much more horizontally. These gaps can waste students' time, cost them money, frustrate them, and hinder their progress in achieving their goals. For example, it can be difficult to change majors because different degree programs will not accept similar courses, or information from student advisors from discipline to discipline is contradictory.

Key organizational participants and stakeholders should have a clear understanding of the entire customer experience and provide input for service improvement and innovation

An idea central to service blueprinting is that the collective knowledge of those who deliver or will deliver a service is valuable and required for service improvement or innovation. To create a seamless experience, those involved with service delivery need to first understand how their actions fit with and affect the entire service as experienced by customers. Pulling from their experiences, they can then offer important ideas and perspectives on service improvement and innovation that can be informed and validated using customer, operational, and other types of data.

Through focused discussion, key insights can be gleaned that can have a profound positive impact on the service that is ultimately delivered to customers. These discussions can also energize contributors as they see their connection to enhancing the customer experience. Within higher education institutions, organizational infrastructure and practice have not historically facilitated this broad understanding of and collaboration around the student experience. Improvement and innovation efforts have often been fragmented and focused within individual units or groups. This approach can be less than optimal, as it does not consider the entire experience when deciding where to pursue improvement and innovation efforts, and efforts may not seamlessly fit together to improve the broader student experience.

Organizations need visual depictions or maps because it is difficult to describe, conceptualize, and communicate customer experiences or service processes when relying on words alone

A major catalyst for using the service blueprinting technique is the belief that the process and performance nature of services makes talking about them in a way that can productively advance redesign and development efforts challenging. For example, through straight discussions it may be hard to figure out what constitutes all of the elements of a service, to identify problem areas that exist, and to develop new service innovations. When just speaking to another person about a service, individuals are likely to present an overly simplistic description of the service, leave elements of the service out, and present the service from the point of view that is most familiar to the person describing it. Even individuals who appear to agree verbally about something—for example, that it is important to be responsive to students’ needs—can disagree over what that means. They could disagree on what the behaviors would look like that would demonstrate being responsive to students’ needs.

For these reasons, we believe visual depictions or maps are required. Like most organizations, however, higher education institutions generally do not possess these visual depictions or maps that lay out current and desired student experiences that they are aiming to deliver. If they do exist, they are likely internally focused process maps, which are not connected in a way that lays out the entire student experience. Higher education institutions, like other organizations, rely heavily on organizational knowledge to repeatedly deliver services—which can lead to lower overall service quality, higher variability in service quality, and less best practice sharing across groups.

These key beliefs, taken together, lead us to the need for service blueprinting as a technique for improvement and innovation. They also allow us to see how the underpinning of service blueprinting is at odds with how higher education institutions have traditionally been built and operate.

Service blueprinting as a technique

In practice, service blueprinting is a collaborative technique that enables individuals typically within, but also across, organizations to scrutinize and improve services, sometimes radically— or to design completely new services from a customer’s point of view. It is the shift in perspective that leads to previously undiscovered improvements and innovations. This shift is from an internal process view to an external customer experience view, which can highlight unmet customer needs, blurry internal coordination points, and, even more strategically, organizational misalignment around objectives, goals, and measures.

At its core, service blueprinting is a highly adaptable and effective technique that provides a common language and brings together relevant and often diverse organizational people in a room to identify improvements and innovations in a specific area. The discussions facilitated by the technique can lead to well-vetted quality improvements, strategic change efforts, service design improvements, and service innovation grounded in the customer perspective.

Service blueprint components

We begin by defining the components that constitute a typical service blueprint. These components or rows of content are the basis for the collaborative discussion that emerges when the technique is applied. There are typically six components of a service blueprint. These six components are depicted in Figure 2 and they are also easily identified in the concept blueprint of the hotel stay in Figure 1:

- Customer actions
- Onstage technology actions
- Onstage contact employee actions
- Backstage contact employee actions
- Support processes
- Physical evidence

We will describe each of the components using a higher education example: students taking a traditional, in-person college course.

The central component of a blueprint is the customer actions row, which depicts, in chronological order, each of the steps customers take as part of the service. This

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row is meant to capture the customer experience throughout the service, so it includes all steps and activities that customers engage in (including waiting) during the service. This row is usually laid out first, making sure that the perspective of the customer is driving the discussions that take place. For student actions related to taking a course, we would want to begin by assessing when the service starts from the student’s point of view. This could begin with the steps taken to learn about, register, and pay for a course and go all the way through steps taken to complete the final exam and receive the course grade.

The line of interaction separates customer actions from the next component, onstage technology actions, which highlights, again chronologically, the actions completed by technology for a customer. Typically these are actions delivered for customers by self-service technologies such as a website, kiosk, an automated phone system, or other technology. Whereas the customer actions row highlights the steps taken by the customer, the onstage technology actions row captures what the technology does in response. For onstage technology actions related to taking a course, the onstage technology may display the list of courses, accept the student’s registration, provide confirmation, and so on. The onstage technology actions component is a relatively new addition to service blueprinting but a necessary one, given the infusion of technology into services. This is especially true in the context of higher education, with the use of course delivery websites and the rise of online education.

The next two components, or rows, focus on the actions of contact employees who, by definition, have role responsibilities that include directly interacting with customers either in person or through the telephone, email, or other technology. First, there are onstage contact employee

FIGURE 2
Service Blueprint Components and Definitions

PHYSICAL EVIDENCE

Definition: All tangibles that customers come in contact with during the service experience that impact their customer quality perceptions.

CUSTOMER ACTIONS

Definition: All steps that customers take or experience as part of the service being examined.

line of interaction

“ONSTAGE” TECHNOLOGY ACTIONS

Definition: The actions by customer-facing technology (e.g., websites, automated telephone systems, kiosks) that customers experience as part of the service.

“ONSTAGE” CONTACT EMPLOYEE ACTIONS

Definition: The contact employee actions that involve face-to-face interactions with customers.

line of visibility

“BACKSTAGE” CONTACT EMPLOYEE ACTIONS

Definition: Other contact employee actions (not involving face-to-face customer interactions) including email and telephone contact with customers, preparation work, and any activities that facilitate the service process.

line of internal interaction

SUPPORT PROCESSES

Definition: Activities that facilitate the service and are done by individuals who are not contact employees. This also includes technology-based and other systems that are needed for the service to be delivered.

Source: Copyright Center for Services Leadership, ASU.

actions that involve face-to-face interactions with customers. Then, below what is referred to as the line of visibility, are the backstage contact employee actions, which are all of the other activities that the contact person does as part of the service, including telephone and email contact with customers. When face-to-face interaction is not part of the service, these definitions can be modified as desired. Faculty members, in their roles as instructors, are contact employees. When they are teaching traditional face-to-face courses or meeting with students in their offices, these would be examples of onstage contact employee actions. Responding to student emails, preparing and grading exams, and preparing for class would all be examples of backstage contact employee actions done by faculty members. By capturing a comprehensive view of contact employee activities, organizations can better understand how contact employees are contributing to the experience and spending their time.

Although contact employee actions are important, not all of the mission-critical and other activities needed to provide a service are done by contact employees. Many important tasks and systems are in place that enable the service to be provided. For example, in the context of providing a traditional higher education course, technology-based systems such as computer systems are used in the classroom. There is also technical support provided by information technology professionals who aid faculty by updating the technology and fixing it when it is not functioning properly, but these individuals do not typically interact with students. These types of behind-the-scenes activities are shown in the support processes row of the blueprinting. It is important to reiterate that these support processes are critical in supporting contact employees and delivering the customer experience.

The final component of a blueprint is physical evidence. For each customer action step, physical evidence consists of the tangibles that customers come in contact with that can affect their perceptions or facilitate delivery of the service. This evidence is critical in services, since customers—or students, in this case—will key in on any clues to help them assess the quality of the service. With students taking a traditional course, this would include, among other things, the course materials, the look and atmosphere of the classroom, the faculty member's apparel, and the design and appearance of the course website. Physical evidence is identified across the top of the blueprint, matched with customer actions.

Service blueprint process and flexibility

Although the service blueprints themselves can be very useful, it is the process involved in creating them that is the true power behind the technique. Service blueprinting is based on collaboration among stakeholders who contribute to the service delivery process. These individuals may represent a diverse number of areas within the organization but they all have expertise concerning how their areas contribute to the service that is or will be delivered to customers. Working in teams, sticky notes are used to capture the service elements as participants discuss the intricacies of a service from the customer's point of view. The blueprint creation process may take a few hours to a few days depending on the nature of the blueprinting task (e.g., improving a simple, existing service or creating a new, complex service offering). Once a team creates a blueprint, it can be put into a digital format to be shared easily within the organization. More detailed information about implementing the service blueprinting technique in organizations can be found in the appendix.

As with any technique or tool, service blueprinting is more powerful when it is modified to fit the context in which it is being applied. In our work with organizations, we have used a number of different modifications. One such modification is adding an additional customer row when a single service is being delivered to distinct but connected customer groups simultaneously. For example, in work that we conducted with a large public university, we were looking for ways to increase awareness, applications, and enrollments in a specific undergraduate program. In the process, we included and examined two customer action rows, one focused on prospective students and the other on their parents. Examining the service experience for these two groups of connected customers simultaneously led to some unique and interesting insights and ideas on communication strategies. Specifically, the blueprinting participants—who included representatives from marketing, recruiting, web and database, admissions, and student services—left the session with greater clarity on the prospective students' and parents' roles in the college search process, which led to ideas on how to enhance existing communications sent to parents by speaking more directly to their specific role. In addition, the session produced innovative ideas on how to better time these parent communications in a manner that would reinforce and work more closely with the prospective student correspondence.

Another potential modification is to duplicate the onstage technology actions, onstage contact employee actions, and backstage contact employee actions rows.

This modification allows one to deeply analyze not only the interaction between the end customer and contact employees but also the interaction between the contact employees and their broader organization. Effectively, this modification also treats the contact employees as customers and ensures the organization is interacting and supporting them in the best possible way. For example, in a separate engagement we conducted with a major public university, our aim was to identify and help address student and faculty problem areas involved in the delivery of a specific online program.

To help achieve this goal, we looked at the interaction between students taking the course and the faculty teaching it, as well as the interaction between the faculty teaching the course and the staff supporting them in course delivery. The meeting included members of the faculty, program office, online services, student services, and technical support. This blueprinting session resulted in the identification of a set of critical student and faculty problem areas—particularly surrounding technology-related course issues—and facilitated a discussion that clarified the roles of all groups involved in online course delivery broadly and issue resolution specifically. The solution, which was developed to benefit students and faculty by clearly laying out where to turn for prompt service and issue resolution, was set for immediate testing.

Service blueprint extensions

The types of modifications to the blueprint are limited only by the needs of those applying the technique. In addition to modifications, common extensions of blueprinting to consider include:

- Capturing external and internal pain points and “moments of truth” on the blueprint itself
- Adding customer or operational data
- Adding a time dimension
- Adding customer emotions experienced at select points in the service process
- Including videos of actual or desired customer experiences

For existing services, the basis for making service improvements often comes from identifying and prioritizing problem areas or pain points in the service. These may be places in the service delivery where customers feel the process requires too much effort or takes too much time. They may be times when customers become

confused about what is happening in the process or what they or employees are supposed to be doing. These are points in the process that customers are likely to say are dissatisfying to them. There can also be internal pain points. These are parts of the process that employees perceive as taking too much effort and can negatively affect their ability to serve customers effectively. These internal pain points may or may not be felt by the customer. Once these points are identified, customer or operational data could be added to the blueprint to verify these areas identified by the group. The problem areas can then be prioritized based on their impact on the overall experience. Problematic points in the process tied to interactions deemed most critical to the experience by customers—often called and noted on the blueprint as moments of truth—may be immediate priorities to address. Adding a time dimension can also be useful, as often timeliness and responsiveness are critical to the customer’s perceptions of the service. This could involve capturing the length of time it takes to complete a single step and the length of time that occurs between steps, as well as the length of time for the entire service. This dimension can help those involved pinpoint highest-priority areas and begin identifying improvement actions.

While capturing customer actions is central to the blueprint, at times one of the goals is to better understand the customer experience in more detail. One way that can be expanded is by adding information about the emotions that customers experience at each step in the process.³³ Are they uncertain? Angry? Bored? What does this mean for how customers behave and experience the service? To get a better sense of the customer experience, it can also be helpful to capture video of the service experience from the point of view of customers to accurately gauge the physical evidence that exists and each of the steps undertaken during the service. Similarly, video can also be created to depict what an ideal service experience would look like for an enhanced or new service offering from the customer’s point of view. These videos could be used in employee training and for standardization across groups.

Benefits achieved through service blueprinting

We have observed countless benefits gained when organizations utilize service blueprinting. These include benefits that can translate into greater value for the customer, organization, and individual employee. Within higher education, these benefits could be realized by the student as the customer, the higher education institution as the organization, and the faculty or staff as the individual employee.

At a college or university, service blueprinting can be used to highlight areas of professional development and training for faculty and staff members.

Customer-focused benefits

By examining services from the customer's point of view, the customer—or student, in the case of higher education—is an important beneficiary. The collaborative discussions facilitated by service blueprinting illuminate the customer's role and demonstrate where the customer experiences quality, assist in identifying fail points and opportunities for improvement and innovation, and help identify areas that require greater communication with customers. All these items, individually or collectively, can help an organization improve the experience, which can lead to greater customer or student-centered value.

To illustrate, one large hospital network we worked with uncovered a key fail point within its hospitals when different units within a hospital were jointly blueprinting a patient's stay. Many emergency room patients at this hospital are regularly admitted for further monitoring. It was discovered through the blueprinting process that there was not a clear and seamless transition of the patient from the emergency room to his or her overnight room, given differences in where each group defined the start and end of its involvement in the patient's experience. This highlighted the need for a protocol about how a patient transitions from unit to unit within the hospital, which was aimed at improving the patient's experience. Similarly, in a university setting, service blueprinting may identify situations where students across their entire university experience are not sure where to turn for help, and faculty and staff who assist students are not sure who within the university is responsible for helping solve a student's problem. Without a technique that sheds light on these gaps, they can go unidentified and the student is the one who ultimately suffers. These gaps, however—once identified and closed—can produce significant benefits that not only improve the process but also the outcomes.

Organization-focused benefits

The organization, or higher education institution, can also realize significant benefits from service blueprinting. Introducing the mindset and technique into an organization can establish a common customer-centric framework and vocabulary, provide a focused way to better understand and standardize service processes and offerings, and facilitate new service development. Each of these elements can help an organization improve efficiency and enhance the value perceived by customers.

As an illustration, we worked with a major health care firm that used blueprinting to examine how its operations in different regions of the United States differed in terms of how they interacted with customers and the characteristics of the service offerings provided. The company used blueprinting to discuss regional differences and then come to agreement on what constituted the core process and offerings, and what were possible additional value-added services that could be offered. This engagement was aimed squarely at helping the organization improve efficiency and customer value perceptions. Similarly, within higher education, the technique can be used to map similar services—such as student advising—that take place in different colleges or departments and then can be used as a basis for comparison and best-practice sharing. In addition, it can be used to ensure critical organizational knowledge is not lost, such as when faculty routinely move in and out of administrative roles within a college or university.

Employee-focused benefits

Service blueprinting also provides a number of benefits related to individual employees or faculty and staff in the case of higher education. The inclusive nature of service blueprinting helps employees relate “what I do” to the service viewed as an integrated whole; identify areas where greater employee marketing, education, or training is needed; and drive employee buy-in for new service offerings or improvements. These elements can help produce a more customer-focused, educated, and engaged employee base. In fact, this can be the most powerful outcome associated with service blueprinting.

To illustrate, we once worked for a leading company that had implemented a complaint database system. During the blueprinting presentations where the teams described the outcomes of the blueprinting process, a group blueprinting the service recovery process noted that only complaints that had to be escalated because the frontline person didn’t know the answer were input into the complaint management system. It was clear that this company needed to further train its employees to understand what it considered to be a complaint and when they should use the complaint management system. Similarly, at a college or university, service blueprinting can be used to highlight areas of professional development and training for staff members. By engaging staff members in broader discussions around the student experience, it will get them outside their specific group and role and potentially highlight broad or specific knowledge gaps.

Ultimately, service blueprinting as a technique doesn't tell you or your institution what to do but it does provide a unique lens, help you to ask the right questions from the customer's or student's perspective, and think about how things should work by bringing the key players with the knowledge and expertise together around a common focus. Throughout this section, we showcased a variety of examples of how service blueprinting has been and can be applied across industries, including higher education. Our experience shows that service blueprinting is equally effective anywhere that service processes or offerings exist from for-profit to nonprofit organizations.

Therefore, despite the uniqueness of higher education as a service, we have seen firsthand that service blueprinting can be implemented successfully to drive better collaboration and more favorable stakeholder outcomes. In fact, one could argue that service blueprinting could be particularly relevant and valuable in higher education, as it could help bring together and align diverse employee bases, including faculty and staff. We view it as an additional technique that can be used along with other public policy perspectives such as the institutional analysis and development, or IAD, framework to improve higher education.³⁴

With the overview and discussion of the service blueprinting philosophy and technique as a backdrop, next we provide some examples of how service blueprinting can be used to help transform higher education.

Service blueprinting applications in higher education

Service blueprinting can help a university better understand, evaluate, and improve its current service processes (credit transfer and financial aid) and offerings (degree programs) and implement widespread organizational change by creating new ones. These efforts can be aimed at addressing some of the concerns or challenges presented earlier in this paper as well as others facing higher education institutions. As it relates to student retention, for example, one can use service blueprinting to create a picture of the students' end-to-end experience at a university from when they first interact with the university to get information prior to applying until after they graduate and use it as a platform to explore questions such as:

- At what points in their experience do some students leave the university?
- What are the root causes of their departure?
- What service improvement or innovations can help address these issues?

This is an illustration of the thought process that service blueprinting can help provide for an organization.

To further explore how service blueprinting can be useful in higher education, we present two examples. In the first, we show how blueprinting could be used in a student learning context to redesign courses from a traditional face-to-face format to an online or hybrid one in a manner that enhances learning and increases student satisfaction. The second one examines how blueprinting could be used to identify student pain points and improve the student experience going through the financial aid process. We selected these specific examples to showcase two important services within higher education and also to suggest the broad applicability of service blueprinting within higher education.

Moving a traditional course online: A case study of course redesign

ASU designed an online course with more challenging content while reducing the course cost per student from \$50 to \$28, due to the need for fewer faculty members and graders.

Close to 30 percent of all higher education students are taking one or more courses online.³⁵ In the fall of 2009, more than 5.6 million students took at least one course online.³⁶ It is clear that online education will continue to grow. Public institutions of higher education, driven by students' interest, funding constraints, and a desire for achieving greater productivity, are actively redesigning many of their courses from a traditional format to a hybrid or fully online format. Challenges exist, however, in terms of creating content and delivery that truly enhance the learning experience for students.³⁷

Developing outstanding online courses can be difficult and requires faculties both within and across universities to negotiate a learning curve to design them successfully. Universities typically rely on informal mentoring or internal courses to provide training for faculty.³⁸ Even with these methods, it can be challenging, as it is with other service processes, for faculty to understand all the aspects of the content and service delivery that have been changed. When learning about successfully redesigned courses, discussions alone can't always convey what changed when the course was redesigned and what is being done differently.

Creating a successful online course may mean radical rather than incremental change. If not informed otherwise, faculty may approach developing an online course by simply doing the same thing they do in their traditional classroom but doing it online. They may view the online course as simply a single change in the delivery channel as opposed to a comprehensive change in the entire student experience. Blueprints can help faculty quickly visualize the changes that have occurred and can help them learn from their colleagues about what has worked and not worked. They can easily be shared with faculty who are going to be teaching the course for the first time and can give them a basis for continuing to change the course in the future. Service blueprinting can be used by departments and colleges to have faculty collaborate in redesigning courses. Universities could examine the blueprints of successful versus less successful online courses to help understand the differences that exist.

To provide an example of what the service blueprinting process and resulting course blueprints might look like, we will give an example using an undergraduate computer literacy course that was redesigned at Arizona State University, or ASU, from a traditional lecture-format course to a hybrid and online course.³⁹ The faculty member in charge of the redesign followed a user-centered approach, think-

ing through the redesign elements from the student's and faculty member's point of view rather than explicitly using the service blueprinting technique. Below we describe the course, the redesign, and the outcomes of the redesign, as well as two blueprints—one of the course as it was traditionally delivered and one of the redesigned, hybrid/online course.⁴⁰

Computer Literacy was traditionally taught at ASU in large lecture sections. The catalyst for the redesign was the belief that both the content and the delivery method for the course were outdated. Given redundancies in instructors, graduate teaching assistants, and graders, the administration felt that reduced costs could also be achieved by redesigning the course. Overall, it took two years to accomplish the redesign. It happened in phases, with a pre-pilot and then a pilot of the full redesign. The redesign was approached by looking at the process by which students and faculty best realize value and achieve their goals. Great attention was given to understanding the different types of students in the course and how they wanted to learn, their learning styles, and their expectations.

Using service blueprinting in this context would involve bringing together relevant faculty members, instructional designers, information technology professionals, and others who play a role in course delivery. Although the goal of the blueprinting session would be to focus on creating the best online course in a particular subject matter, there also can be benefits to first blueprinting how the course is currently designed. By blueprinting the current course and including former students in the process, it may be possible to more accurately identify problem areas that need to be reduced or illuminated in the redesign. Students who have familiarity with online courses could also be included when creating a blueprint for the redesigned course.

Traditional course

The original course was taught in large sections with a capacity of 270 students per section, with four sections taught each semester. Each section had a faculty member, a graduate student teaching assistant, and undergraduate graders. Students attended two lectures a week and turned in hard copies of 12 assignments that were completed throughout the semester. Four paper-based multiple-choice exams were given during the semester. Open lab hours were available where students could get help from TAs and undergraduate graders. (See Figure 3a, in the appendix for a blueprint of the traditional version of the course.)

Several of the pain points experienced by students in the course are highlighted on the blueprint. First, traditional large-section courses, especially those that are required, typically have a diverse group of students taking them and, as much as faculty may try, it is difficult to tailor them to meet the students' diverse needs. Advanced students may be bored, while those who are less familiar with the subject matter may not be comfortable asking questions in a large setting and may struggle and fall further behind. In small-size courses it may be easier to deal with these different types of students by providing more attention, recommendations for further learning for advanced students, and more help for those who need it.

With larger courses, this is more challenging. It also can be harder to create an interactive learning environment for students in a large lecture hall. Other issues that are highlighted on the blueprint include the time spent collecting and distributing hard copies of assignments, which most would agree is not an effective use of class time. Students also, at times, had to wait in line to get help in the computer lab because they frequently came to get help at the same time.

Redesigned course

The goal of the redesign was to improve learning outcomes and the student experience while reducing costs. The redesigned course has two versions: a completely online class, with one section taught each semester that can serve approximately 500 students; and two hybrid sections taught each semester that each have the capacity to serve approximately 300 students who meet once a week face to face, with other elements of the course occurring online. One hundred percent of assignments are turned in online, which removed one of the traditional course problem areas.

All the sections are taught by one faculty member/course coordinator with one teaching assistant. One benefit of the redesign is that all sections of the course use the same course delivery site. Hybrid students are told the first day of class that all course material is available online and that coming to class is optional. The number of students coming to each meeting dwindled over time, with just the ones needing help attending regularly. It allowed the faculty member to tailor the discussion and give more personalized attention to those students who needed the most help. This helped tailor the course based on students' knowledge base and skills. All the material for the course was available at the start of the semester so high-speed learners could complete the course more rapidly than those who required more time to get comfortable with the material. (See Figure 3b, in the

appendix for the blueprint of the course after the redesign.)

The redesigned courses had more sophisticated content but also made it easier for students to get help. Students completed nine online quizzes that demonstrated their understanding of computing concepts, seven self-guided learning assignments where they were asked to apply computing concepts as well as computer-driven problem-solving techniques, and four major projects that required substantial inquiry. Based on each student's preference, they were given scheduled times to receive guidance in the computer lab, which reduced and, in many instances, eliminated wait times.

Another issue that new online faculty may be concerned about is the time it will take to respond to student emails. The blueprint redesign clearly shows how that is handled in this particular course, with students being told to use the discussion board to get answers to nonpersonal questions. The faculty member may answer the question so other students have the answer as well. In addition, when undergraduate learning assistants or teaching assistants are not busy helping students in the lab or doing other work for the course, they may also respond to questions on the discussion board. At times, other students in the course may answer the questions. The instructor compiled the questions from the first semester the course was taught online and used that to create a Frequently Asked Questions list that serves as another resource for students. With email used only by students who have personal questions, it is much easier for faculty members to be responsive. Course questions that come via email are addressed on the discussion board.

A number of positive outcomes emerged from the student-focused redesign. First there was an increase in student success: Although the redesigned course provided more challenging content, 65 percent of its students earned grades of 70 percent or higher, compared with 26 percent of students in the traditional course. Student satisfaction with the course also improved. In addition, the course cost per student decreased from \$50 to \$28, due to the need for fewer faculty members and graders.⁴¹

This example illustrates the innovative thinking and radical improvements that are possible through the use of customer-based techniques such as service blueprinting. It can help break higher education institutions out of a cycle of looking only at incremental improvement ideas. In the example that follows, we show how service blueprinting could be used to identify problem areas that could be the catalyst for change within the financial aid process.

Using service blueprinting to improve an existing service process: The case of financial aid

One of the nonacademic services that is critical to students' experience and progression in higher education is the financial aid process. It can be challenging and ultimately affect where or if a student decides to attend a university. In recent years significant aspects of the process have moved online and become more streamlined. Issues still exist, however, and continued work can be done to improve the process for the benefit of students and institutions.

Looking to identify remaining student pain points and ways to enhance the student experience, financial aid directors could use blueprinting to assess the current process from the student's perspective. Using the technique successfully would require bringing together representatives of all the areas in a university—both within and outside the financial aid office—that contribute to the financial aid service delivery process that students experience. This would include not only frontline financial aid staff who answer students' questions and help guide them through the process but also financial aid decision makers within the university, those involved with setting tuition, communications staff, admissions personnel, and those who disburse financial aid, among others. In addition, further benefits could be obtained by having a high school counselor or current undergraduate students who have recently gone through the financial aid process participate in blueprinting. By bringing these individuals together, it is possible to gain an in-depth understanding of the end-to-end process that students experience in order to receive financial aid. Through discussion, pain points as well as opportunities for improvement and innovation may be identified.

Working with financial aid professionals, we developed examples of what blueprints of the financial aid process might look like from the point of view of a prospective undergraduate student.⁴² (See Figure 4, in the appendix.) When key stakeholders and contributors to the financial aid process have in-depth discussions about the nature of the process, how it works, and how it is experienced by students, it is possible for them to put themselves in the shoes of prospective undergraduates and ask probing questions about the current process. Using this technique can enable university administrators and financial aid professionals to identify potential problem areas for students and gaps in service and/or disconnects that currently exist within the process. It may help raise questions and identify gaps that other techniques cannot because they are not focused on the student perspective.

Key questions

By examining the process, we identified key questions that could lead to valuable discussions about the process, which are noted on the blueprint in Figure 4. These discussions could identify a lack of knowledge about students and their experiences with financial aid and could be a catalyst for additional research. They could also lead institutions to seek out best practices concerning how aspects of the process are handled. From the policymaker's point of view, blueprinting may highlight areas where changes at a system level would be most beneficial to students. Overall, four main themes in terms of key questions emerged from the discussion that could be valuable both for institutions of higher education and policymakers. Again, we present these not as recommendations but as examples of the types of questions that service blueprinting is likely to bring to the forefront that could have important implications for universities and policymakers.

Are all prospective undergraduate students—traditional and nontraditional—getting the financial aid information and guidance they need when they need it?

Blueprints are built around customer actions so it is critical that one understands the customer. Here, looking at prospective undergraduate students and knowing the diversity that exists among traditional and nontraditional students, the question of whether all subgroups have access to needed information and guidance is important. Do these different groups have access to people or websites when they need them? Do they want and need the same types of information and guidance? Asking these questions can pinpoint gaps where some prospective students' needs for information are not being adequately met.

Is there a disconnect in the university's timing in sending out financial aid letters and in determining new tuition rates, leading to inefficiency and prospective student confusion?

Students are likely to use the previous year's tuition at a university as the reference point to determine its affordability. When new higher tuition levels are determined and communicated to students late in the process, especially if there is not a corresponding strong financial award, this can change the affordability of that university for a student.

If higher tuition rates are set after financial aid letters have been sent to students, this can lead to additional confusion and the possibility that students have made decisions about what university to attend based on incorrect information and that opportunities at other universities may no longer be available. Ultimately, late

The service blueprint also highlights the need to think about students' motivation and ability to fulfill their role in value creation.

tuition setting can be detrimental to students' ability to accurately assess a university's affordability, can hinder their decision-making process, and can reduce their ability to properly budget.

This issue highlights the fact that many service processes do not happen in isolation but are influenced by service systems interacting with one another. Although the entity responsible for setting tuition may differ by state and university (a university's board of trustees, a state governing board, a state legislature), there are situations where the timing of tuition decisions is not controlled by the universities themselves. It illustrates how interacting service systems ultimately affect end consumers, sometimes negatively.

Does a lack of standardization across schools in terms of financial aid award letters and net price financial aid calculators lead to student confusion?⁴³

Throughout the financial aid process, students may be comparing information from multiple schools. Differences in how that information is presented and discussed influence how students understand and process the information. Are students adequately able to understand how the financial aid offers differ from one another and how they relate to the cost of attendance? Does variation across schools in terms of information content and how that information and awards are described affect students in negative ways? Similarly, how might differences in how universities decide to implement federally mandated net price calculators lead to confusion?

Are we doing enough to help facilitate the co-creation of the financial aid process?

Given that the blueprint depicts actions that students take as part of the financial aid process, it clearly illustrates the extent to which the financial aid process is a service experience co-created between universities and students. Although looking at what the university can do to make the process more streamlined and user-friendly for students is important, the blueprint also highlights the need to think about students' motivation and ability to fulfill their role. To get the best financial aid packet, for example, students need to apply early, since the process is first-come, first-served. When students are not fulfilling their role, it can be useful to examine why that is happening. Is it because they do not clearly understand their role? Or is it that they do not understand the need or value of fulfilling it? Are they not motivated to fulfill it?

As this example illustrates, service blueprinting does not provide the answers but facilitates the discussion by bringing in the student's perspective. After identifying these issues, action items could be articulated, such as analyzing or collecting data to verify the pain points that were identified or constructing a business case for proposed changes. Ultimately, it would be important to prioritize action items based on which ones can enhance the performance of the service in ways that are in the best interest of both students and other stakeholders. While some changes might be able to be implemented quickly, others may take additional blueprinting, approval, and planning in order for them to be put into place successfully.

Other uses of service blueprinting in higher education

The beauty of blueprinting is that it can help rethink and invent service processes throughout universities. The technique can be used to examine micro processes delivered by and contributed to by a small number of departments or units within a university. It can also be used to examine macro processes that involve many departments, groups, and functional areas within a university, and even other organizations such as other universities or private companies. The technique can focus on any customer-facing process or offering that already exists from a service improvement perspective, as well as true service innovations where a new service process or offering is being put into place for the first time.

Micro to macro service blueprinting efforts

Figure 5 provides some additional examples of how blueprinting can be used. It is important to note that where any particular process is placed along the micro-macro process continuum is influenced by how many groups, departments, and people contribute to a service and need to provide their expertise in blueprinting efforts. This is likely to differ by university. When private companies or other institutions are brought in as collaborators, this in and of itself can make the process more macro in focus. Similarly, the service improvement-service innovation continuum depends on whether a university has the process of interest already in place or not. If it does, the blueprinting focus will likely be on service improvement. Even with a process in place, however, it may be deemed that a radical change is necessary and the blueprinting efforts would be framed further toward service innovation on the continuum.

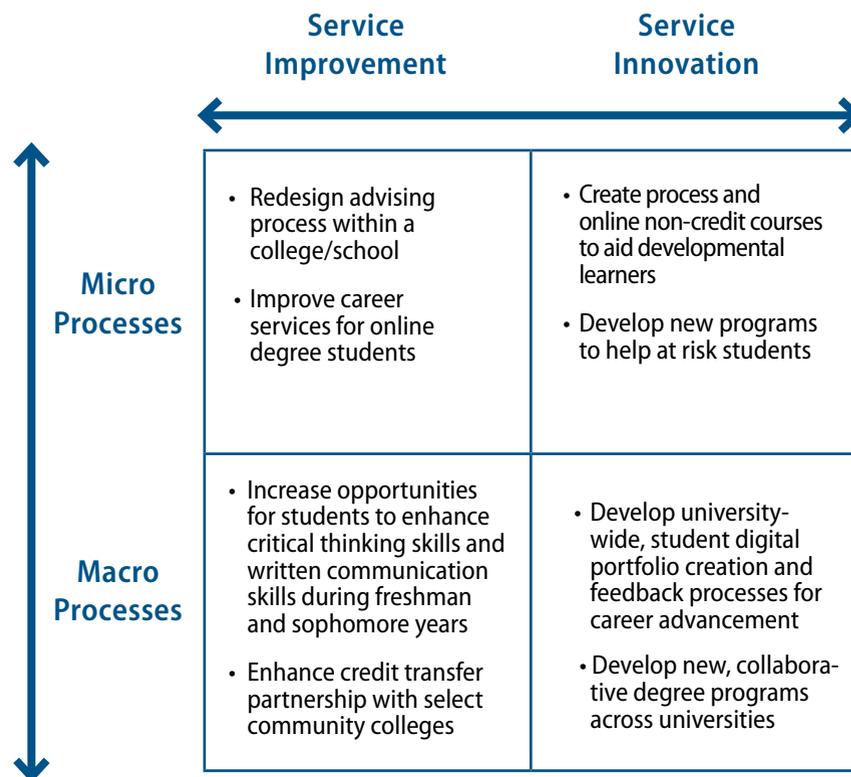
One micro-level service improvement process that could be the focus of blueprinting is redesigning how advising is handled within a college. This type of redesign might involve primarily individuals from within the college itself, although a staffer from university advising or from university information technology might also be appropriate to include in the blueprinting efforts. Similarly, redesigning

career services to better serve online degree students could, in theory, involve primarily individuals within career services and those who play a role in online degree programs. It could be the case, however, that this is approached as a service innovation if the view is that career services need to be reimagined for online students. It also could become a more macro process if a private company is brought in as a partner to rethink career services and what that means online.

Other macro processes could involve looking at ways to improve learning outcomes for students. One example would be to examine, for instance, the freshman and sophomore experience, with the goal of finding ways to embed opportunities to enhance critical thinking and written communication skills. By looking at the end-to-end experience, opportunities within common courses or to add new courses or requirements could be identified. This could be done on a micro level within a degree program or examined at a macro level looking across a university.

Similarly, improvements in the credit transfer process could be explored. Universities could work with their community colleges to blueprint the process that students experience with credit transfers and identify problem areas. Guides

FIGURE 5
Using Service Blueprinting in Higher Education:
Other Examples of Student-focused Processes



that help students identify which courses transfer can aid students when selecting courses to take at a community college. Universities that have significant enrollment from a community college system, however, could approach this as a service innovation process to develop an integrative program between a community college (or community college system) and the university. This would involve not just highlighting courses that transfer but creating a streamlined process that clearly maps out for students a four-year program that seamlessly integrates the experience across the two universities.⁴⁴

In regard to service innovation, whenever a service process currently does not exist, it can be beneficial to approach it by blueprinting what the best experience would look like from the student's point of view, bounded by constraints faced by the university in terms of time and resources. In the context of a university that has a significant number of entering students who are deficient in math, blueprinting could be used to think through the best process for helping developmental learners achieve the knowledge they need to be successful in college-level math courses. Blueprinting could examine how those people are identified, how their status is communicated to them, and the possible ways their skills could be improved.

One possibility is a partnership with a local community college to help students gain necessary skills. Another option would be a university non-credit, online course. Thinking through what would be best from a student's point of view can help participants evaluate alternatives. Similarly, service innovations could focus more broadly on new programs to help students at risk of dropping out or who appear to be struggling, or programs to help nontraditional or first-generation students acclimate more quickly to the university environment.

Other macro processes that would involve a number of groups and individuals across a university would be the development of a university-wide student digital portfolio requirement. To help students build evidence of their skills for employers, universities could integrate into the university experience the creation of digital portfolios. Blueprinting could be used to help think through how students would be educated about digital portfolios, learn how to create them, and a process by which they could receive feedback on them over time.

Another macro process would be using blueprinting to facilitate the creation of collaborative joint degree programs across universities that may provide students unique opportunities that are not available at any of the universities alone, or even partnerships and programs developed with high schools that could enable high

In a university that has a significant number of entering students who are deficient in math, blueprinting could be used to design the best process for helping developmental learners.

school students to interact with a university in ways that help increase high school graduation rates and a greater likelihood of those students enrolling at a university.

Although we have focused on processes where students are the customer, the service blueprinting technique, as mentioned earlier, works equally as well focused on internal service processes and employees as service customers. From benefits management processes to professional development and training to assessment procedures, numerous internal service processes could be developed or improved through the use of service blueprinting. Improving internal service processes that affect faculty and staff can enhance employees' perceptions of their work environment and how efficiently the university operates, all of which can positively influence the student experience.

Using service blueprinting to tackle major innovations

Ultimately, service blueprinting can help address significant challenges facing today's universities. It can bring a student-focused lens to efforts to transform higher education. Consider the following recommendations that have been put forth to improve higher education. Although all of them would be the focus of considerable debate (and we are not recommending they be adopted), they all have significant implications for higher education processes that could be reimaged through the use of blueprinting:

- There has been a call for education that helps individuals develop into “T-shaped professionals” who not only have deep knowledge in one subject matter but also a broad knowledge base across a number of diverse fields.⁴⁵ In today's world of complex problems where these types of thinkers are critical, what kinds of programs could be developed that would help students gain both deep and broad knowledge and skills?
- What if an institution of higher education decided to develop a program focused on prior learning assessment and awarding credit hours based on that assessment process?⁴⁶ What should such a process look like for students? What would the university need to put in place to support that effort?
- What if public universities changed from an input-driven to an outcome-based system that focused on student learning? What if a university removed the use of credit hours as a way to structure the work students have to do, and moved to

more of an assessment-based approach?⁴⁷ What changes would need to be put in place? What would the best, end-to-end student experience look like?

- What if a university decided to try to significantly increase the number of new entrepreneurial companies developed by students or faculty, and to help facilitate the success of those entities in the marketplace? What processes would need to change? What new processes would need to be developed?⁴⁸
- If do-it-yourself learners grow into a sizeable segment, how should public universities address this type of student?⁴⁹

Public policy implications

As we have set forth in this paper, we believe service improvements and innovations in higher education need to be developed with all key stakeholders in mind including students. We also know that public policy, at both the state and federal levels, is a key shaper of institutional practice. Therefore we believe federal and state policymakers can play an important role in the adoption and advancement of a service perspective.

Many of the current policy discussions about innovation in higher education could benefit from a service perspective. For instance, service blueprinting has tremendous potential to better align and coordinate higher education services. As policymakers look for ways to improve quality, reduce cost, and increase completion rates in higher education, we believe service blueprinting could be an important policy tool.

The following examples are intended to start a discussion about the possible benefits of service blueprinting in the higher education sector. The examples are meant to demonstrate how service blueprinting could move various policies forward. It is not intended to be an exhaustive list, nor is it meant as an endorsement of the policy proposals.

Public policy implications at the state level

Higher education is primarily funded and regulated at the state level. States manage their own university and community college systems without significant oversight from the federal government, which means legislation at the state level is likely to have the most immediate impact on the higher education sector.

State policymakers could use service blueprinting to advance the following policy initiatives, among others:

- Facilitate statewide policy development and best-practice sharing within and across universities.
- Online graduation maps for every student.

Let's examine the specifics of each of these state-level policy recommendations.

Many of the current policy discussions about innovation in higher education could benefit from a service perspective.

Facilitate statewide policy development and best-practice sharing within and across universities

Service blueprinting could be used to develop standard statewide policies as needed. For example, many states have already implemented statewide articulation agreements. A smaller number of states have made progress on prior learning assessments. Service blueprinting could provide insight into the most effective ways for a state system to serve students who enter the system (or transfer within it) with prior college credit or college-level competencies. Service blueprinting can also help in sharing best practices in key service areas, such as advising within or across universities. A service blueprint could identify moments in the student experience when inadequate academic advising led to missed opportunities, wasted credits, or delayed graduation. A better understanding of the benefits and shortfalls of academic advising could lead to university or statewide standards to ensure all students have access to academic advising at important points along the way to graduation.

Online graduation maps for every student

Once a university creates a service blueprint of the end-to-end student experience, from application to graduation, all the important steps could be mapped to an online planning tool, or graduation map. Students could use the tool to track their progress toward graduation and find out exactly which core requirements and elective credits they still needed to complete a specific degree. The graduation map could be pre-populated with any transfer credits earned by the student. The map could be linked to course offerings, syllabi, teacher evaluations, and support services. It could also notify students if certain credits could be earned through online courses or prior learning assessments. The graduation map could also be

accessed by the student's faculty advisor, who could offer interactive academic counseling based on the student's up-to-date academic transcript.

Public policy implications at the federal level

The federal government's traditional role in higher education policy has been to ensure low-income and lower-middle-income students have access to financial aid. In addition, federal policymakers need to explore ways in which to promote scalable innovations that enhance student persistence and success. Federal policymakers could employ service blueprinting through the following policy initiatives:

- Competitive grants to promote innovation
- A research agency for education policy
- An internal service blueprint of federal outreach efforts
- Link federal financial aid to student-focused performance measurements
- Exit interviews of degree-seeking students who leave school without a degree
- Improve accreditation standards for schools by including service blueprinting as a required institutional practice

Let's examine the specifics of each of these federal-level policy initiatives.

Competitive grants to promote innovation

Congress could direct the Fund for Improvement of Postsecondary Education, a unit within the U.S. Department of Education's Office of Postsecondary Education, to use its funding to support competitive grants to universities and community colleges across the country. Federal funding for innovative service blueprinting projects could lead to new efficiencies in higher education. Service blueprinting projects could lead to best practices for facilitating financial aid, credit transfer, student retention, faculty advising, online learning, and student completion, among many other possibilities.

A research agency for education policy

The Obama administration, in the 2012 budget, has proposed the creation of an Advanced Research Projects Agency for Education, or ARPA-ED, within the U.S.

Department of Education, modeled after the Defense Advanced Research Projects Agency, or DARPA. Researchers at ARPA-ED could work closely with universities and community colleges to develop a “service-oriented” research agenda that seeks to develop and test innovative policies to improve quality, reduce cost, and increase completion rates in higher education. Service blueprinting is one strategy that could be employed to aid this research. As research results become known, ARPA-ED could host and maintain a repository of best practices for implementing innovative higher education policies.

[An internal service blueprint of federal outreach efforts](#)

The federal government publishes a lot of information about college performance on federal websites but there is very little evidence that students and families even look at this data, let alone incorporate it into their decision making. A service blueprint of the federal government’s outreach efforts could lead to improved outreach efforts that meet the needs of students and families. The U.S. Department of Education’s chief customer experience officer, who is charged with improving customer experience in the financial aid process, could develop and maintain these service blueprints and then use them to inform the different ways that the federal government, states, and colleges interact with student and families to help them enroll and be successful in college.

[Link federal financial aid to student-focused performance measurements](#)

The federal government provides more than \$150 billion per year in Pell Grants, college loans, and work-study assistance to help students pay for higher education. But federal financial aid is largely paid to colleges to enroll students, not graduate them. Service blueprinting could identify pain points in the student experience that serve as impediments to graduation, which would enable federal policymakers to shift financial incentives from a solitary focus on enrollment to incremental rewards for improvement and completion. Based on service blueprints, developed through the competitive grant process described earlier, the U.S. Department of Education could implement an outcome-focused demonstration project in which college and university eligibility to receive financial assistance funds is based on implementation of service-blueprint-informed practices that lead to student completion of a credential.

Exit interviews of degree-seeking students who leave school without a degree

One of the biggest problems in higher education is the low completion rate. Too many students fail to earn degrees that would lead to higher wages and greater productivity. To make matters worse, universities encounter few financial penalties for low graduation rates. The schools continue to collect funds for tuition and fees through Pell Grants and student loans. Exit interviews could identify pain points in the student experience, especially for students who did not complete their degrees. Similar to the proposal to link federal financial aid to student-focused performance, full payment of a student's Pell Grant could be contingent upon completion of an exit interview if the student withdraws from school. The Department of Education could draft a standard exit interview template to ensure comparability of data across schools.

Improve accreditation standards for schools by including service blueprinting as a required institutional practice

Higher education quality, in large part, is managed through the system of voluntary accreditation in which colleges and universities form regional bodies that set standards for what an institution needs to have in place by way of facilities, faculty, policy, and practice in order to be considered a higher education institution. The U.S. Department of Education, in turn, certifies these accrediting bodies as a means of ensuring federal funds (financial aid, research, etc.) invested at their member institutions are used wisely. Congress could require that these accrediting agencies promote better institutional quality for students by:

- Including service blueprinting as a benchmark process in accreditation standards
- Including measures of service quality, in accreditation standards, that evaluate how students respond to the services offered by colleges, including measures of student satisfaction

Public policy plays an important role in shaping the student experience in higher education. We believe policy decisions should be made by focusing on the likely effect on students, as opposed to institutions. Therefore we believe it is important for policymakers at the state and federal levels to embrace the innovations that could be achieved by viewing higher education through a service lens.

Appendix: Implementing the service blueprinting technique

Implementing service blueprinting should not be taken lightly. It requires a carefully thought-out approach to ensure desired end goals are identified and achieved. This is key for success, as the value of service blueprinting is found in the process of applying the technique and not in the technique itself. Our experience suggests that successful implementation requires the following phases.

Plan

In this phase the organization needs to look at the big picture. It is easy to jump right into learning and applying service blueprinting without alignment around several strategic elements. Specifically, in this phase, we encourage organizations to carefully think through and answer the following questions:

What are the objectives and goals of the organization? What is it trying to accomplish strategically?

Our experience shows that starting with a clear perspective of where the organization is and where it is going is a critical first step. For example, is the organization trying to become more efficient and effective by improving existing service offerings and processes? Is it looking for ways to identify, design, and launch new service offerings and processes for the benefit of all stakeholders?

How can service blueprinting be leveraged as a technique to help advance these efforts?

Once the broader framing is set, the organization should assess if and how service blueprinting can play a role in helping achieve its objectives and goals. For example, can the technique be applied to help map and improve a specific process

or the broader experience? Can the technique serve as the focal point for bringing together diverse groups and facilitating service innovation?

Who will sponsor and own service blueprinting in the organization?

Once the strategic application is clear, the organization should determine the sponsor and owner of its service blueprint efforts. The sponsor should be tied directly to the scope of impact desired. For broad organizational impact, we suggest executive-level sponsorship. In terms of ownership, we have found that a combined centralized and decentralized model is often optimal. Centralized resources—such as a university office—can own knowledge of the technique and best practices, while decentralized resources—such as a college—can identify the specific applications.

Rollout

In this phase the organization can become more tactical as it begins to identify where to focus and how to structure its service blueprinting efforts. It is critical to think through the rollout in a logical and comprehensive manner to ensure there are no surprises and the value is fully realized. Specifically, in this phase, we encourage organizations to address the following questions:

Where should the organization start blueprinting? Where are the highest-priority areas?

Our experience shows that it is best to begin the rollout phase by identifying a specific high-priority service to be blueprinted, the focal customer segment, and the specific goal of the effort. For example, does the organization want to blueprint a micro-level service to enhance satisfaction and eliminate pain points for a specific customer segment? Does the organization want to develop a concept blueprint of a new service that will be launched in the next six months for all customers?

What specific groups and individuals should contribute to the blueprinting effort?

Once the blueprinting effort has been scoped, the next step is to carefully identify the specific individuals who need to contribute to creating the blueprint. It is vitally important that there is representation from every group that currently does or likely will contribute to the service being blueprinting, since the diversity in perspectives is what creates the value. In terms of group size, we find a group of 6 to 10 is optimal for blueprint development, but the size can be larger or smaller depending on when sufficient representation from the relevant groups has been reached.

What is the process by which blueprinting will take place? How will the session be conducted?

The final element within rollout is to structure the process by which blueprinting will take place and how the session will be conducted. In terms of structuring the process, the organization needs to answer several questions, including: How will the information be elicited from the relevant parties? Will the groups be actively or passively facilitated? Who will facilitate the session? Who will own the output? Once the process has been structured, the next step is to plan for and conduct the blueprinting session. Here are some tips for making the blueprinting session a success:

- Begin by setting the stage and framing the session around the organizational need.
- Explain service blueprinting and its importance to addressing the organizational need.
- Clearly frame the blueprint to be developed, including the goal of the effort and the focal customer.
- Focus the group on mapping the “typical” service and avoid getting hung up on the exceptions.
- Keep disagreements from impeding work by noting them and moving forward.
- Keep the focus solely external on the customer and his or her actions throughout the process.
- Capture the blueprinting output and secure broad feedback to finalize the blueprints.

Embed

In this phase, the organization should think through how to make the most use of the blueprints and how to begin building and cementing service blueprinting into the organization. Without a focus on the embedment of service blueprinting, the organization risks not capitalizing on the momentum created. Specifically, in this phase, we encourage organizations to think through the following questions:

How will the blueprints be used within the organization?

Developed blueprints are an asset for the organization, so thinking through their use is important. We encourage organizations to address a number of questions to ensure full value is realized, including: Who would benefit from accessing the blueprints? Will the blueprints be used for training? How could interested parties access them? Will they be kept on an internal shared website?

What is the process and timing for updating the blueprints?

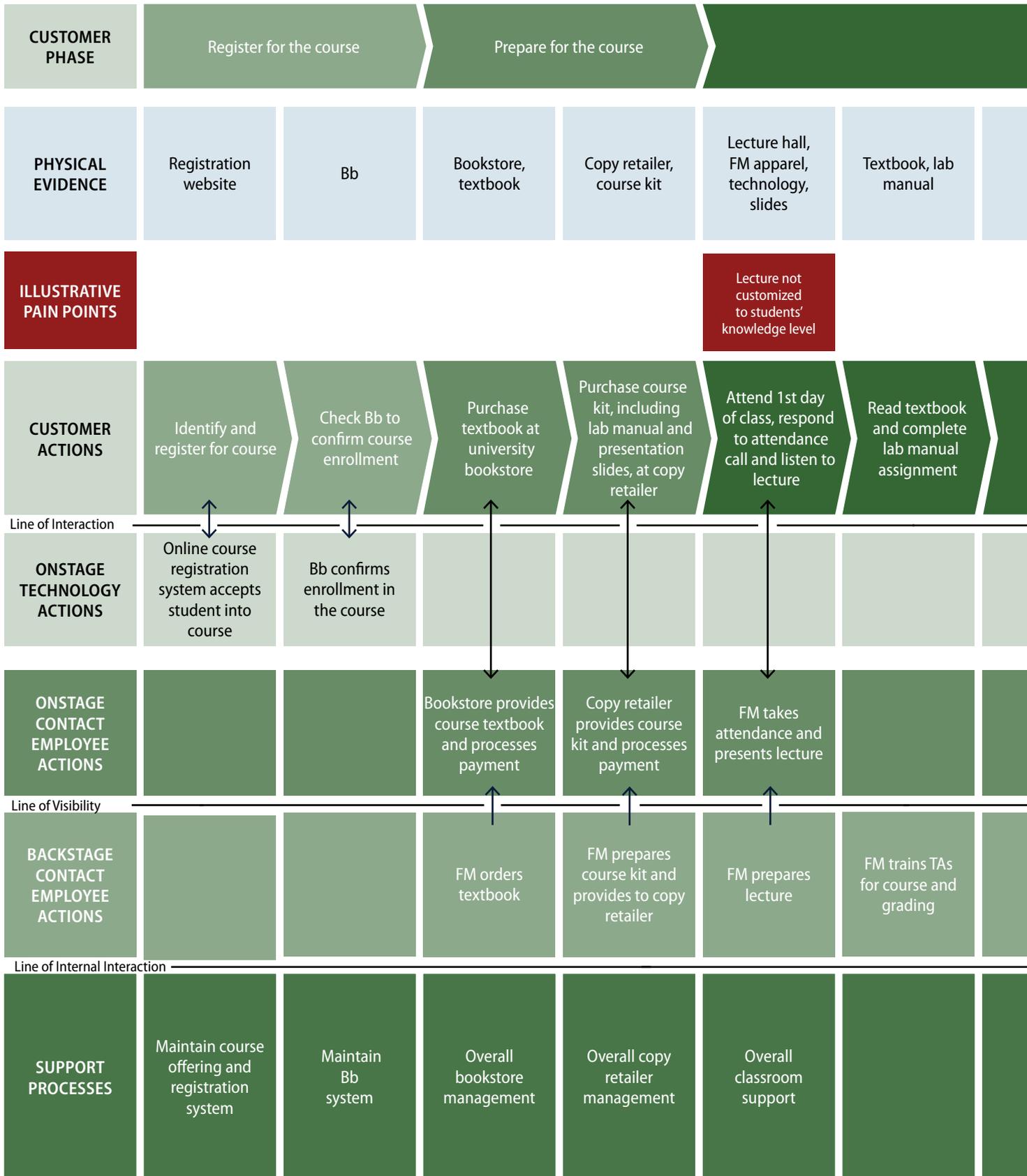
Blueprints should be viewed as living documents within the organization. As a result, they should not be put on a shelf but regularly reviewed and updated for maximum benefit. We encourage organizations to discuss and agree on answers to the following questions: Who is responsible for updating the blueprints? How often will they be updated? What is the process for updating them?

How can service blueprinting be built into the rhythm of the business?

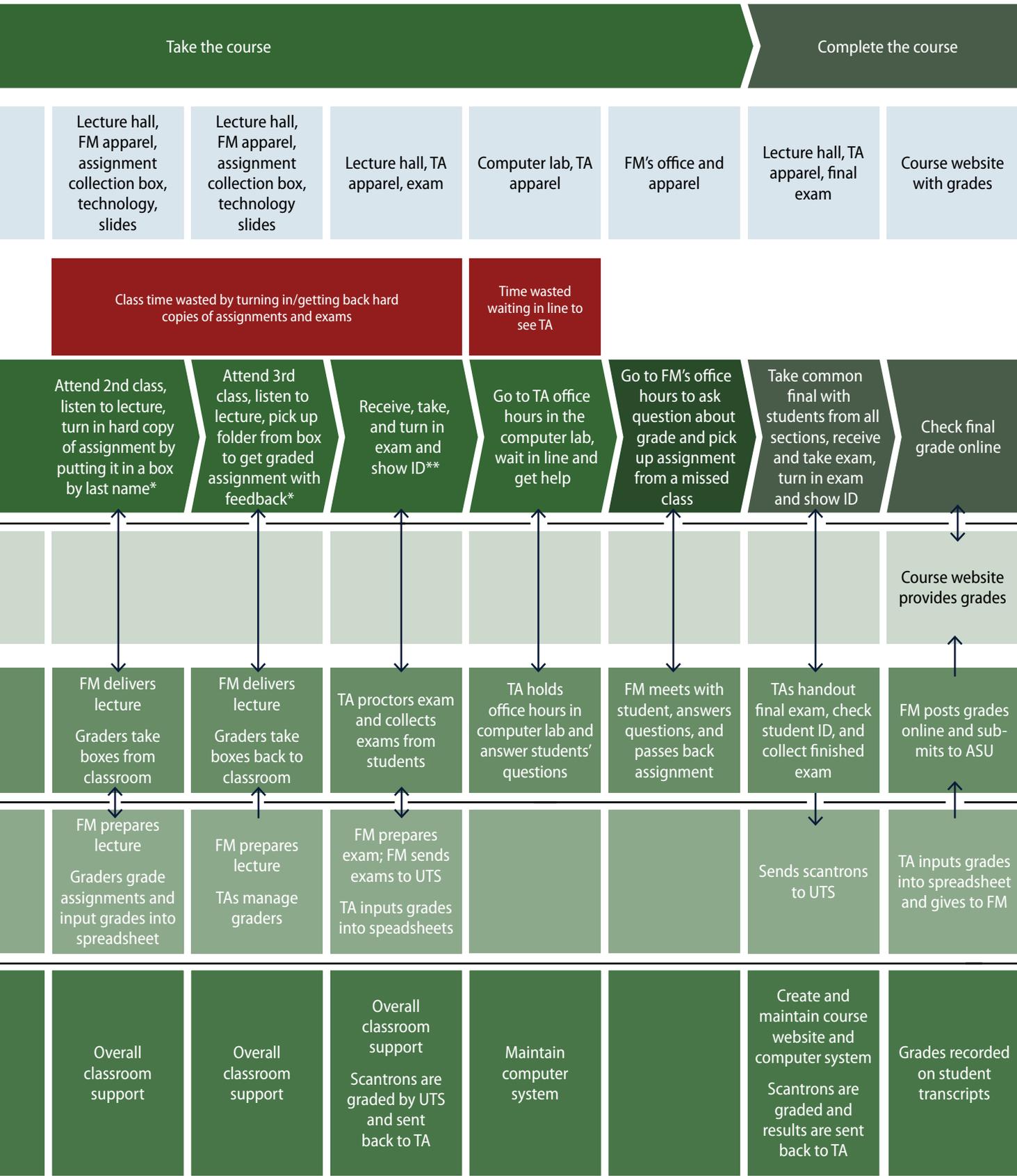
For service blueprinting as a philosophy and technique to thrive in an organization, it must be integrated into the way the organization operates. Therefore we suggest that organizations seek ongoing processes, efforts, and initiatives with which service blueprinting can be integrated. For example, we are seeing more and more organizations weaving service blueprinting into their employee training and embedding service blueprinting as a phase gate requirement into their new service development process. These are only a few examples of how to help service blueprinting flourish.

FIGURE 3A
Traditional, face-to-face course service blueprint

↕ Indicates interaction between customer and the organization's people and technology



Bb = Blackboard FM = Faculty member TA = Teaching assistant ULA = Undergraduate learning assistant UTS = University testing services
 Note: To minimize complexity, vertical arrows are not included for support processes.



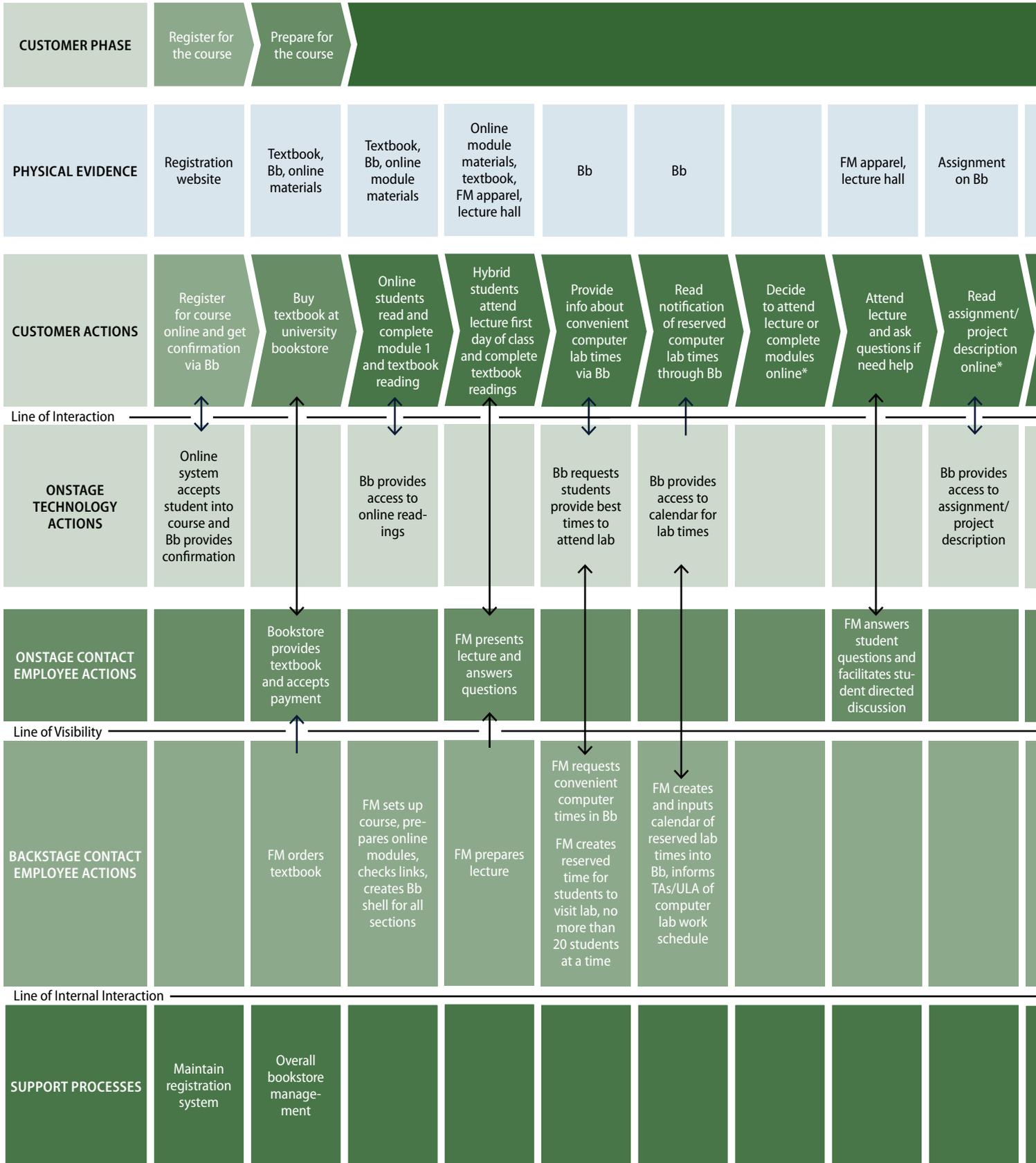
*Repeat process for 12 assignments during semester.

** Repeat for 3 inclass, non-final exams during semester.

FIGURE 3B

Redesign to an online and hybrid course service blueprint

↕ Indicates interaction between customer and the organization's people and technology



Bb = Blackboard FM = Faculty member TA = Teaching assistant ULA = Undergraduate learning assistant UTS = University testing services

Note: To minimize complexity, vertical arrows are not included for support processes.

Take the course Complete the course

Online tutorial, textbook	Assignment drop Box on Bb	Assignment feedback, Bb	Online exam, grade	Computer lab, TA/ULA apparel	Bb			Email, screen cast response	Assignment	Grades on Bb
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Look at online tutorials readings and conduct research*	Submit assignment/project on Bb*	Receive feedback from non-automated grading within 1 week*	Take online exam, submit, and receive grade*	Go to computer lab during reserved time to ask TA questions/get help	Check FAQ on Bb to find answer to question	Send course related question to FM via email	Read email and then screen cast response posted on discussion board	Finish each assignment at own pace no later than deadline	Check final grade
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Bb provides access to links for tutorials	Bb receives and automatically grades aspects of assignment/project	Bb provides access to feedback from TAs	Bb provides access to exam, receives and grades it		Bb provides access to FAQ list		Bb provides access to discussion board		Bb provides access to grades
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				TA answers student questions					
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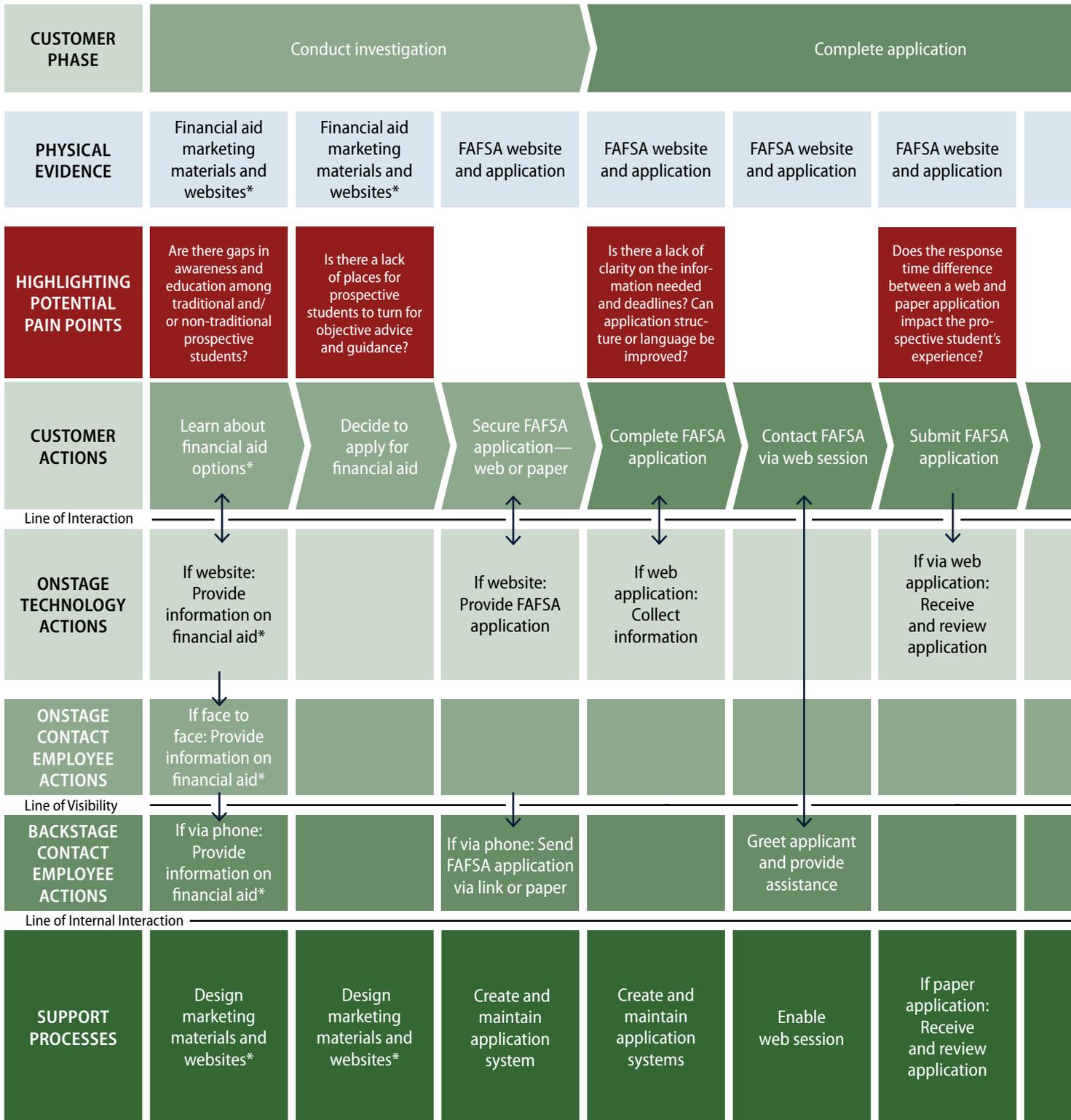
	TAs go through training, do all assignments. Receive grading rubric and manual, learn how to access and grade assignments	TA grades aspects of assignments not evaluated electronically, submit grade and feedback. FM does spot check of TA grading					FM reads question, develops screen cast response, posts on Bb discussion board, and sends email with link		
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	Undergraduate writes code enabling automatic grading of assignments, Maintain automatic grading system		Maintain computer systems						
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*Multiple self-guided learning assignments, major projects, and online exams

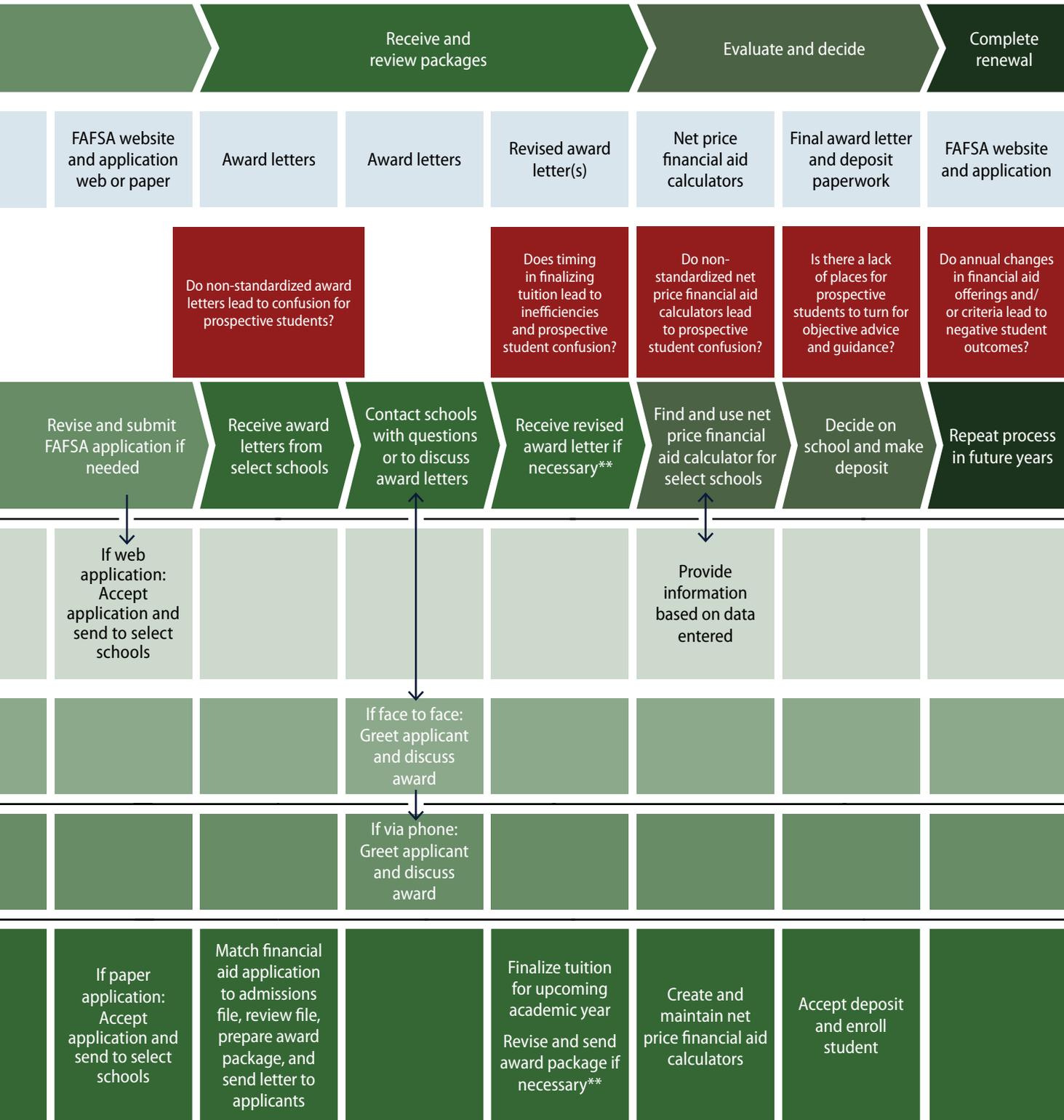
FIGURE 4
Financial aid process service blueprint

↕ Indicates interaction between customer and the organization's people and technology



*From high schools, universities, and other sources.

Note: Various support processes span the blueprint, including human resource and training management and database creation and maintenance. To minimize complexity, vertical arrows are not included for support processes.



**Due to discussion with schools' financial aid personnel or change in tuition after the original award letters were sent.

About the authors

Amy L. Ostrom is the J. Willard and Alice S. Marriott Foundation Professor in Services Leadership, the research director for the Center for Services Leadership, and professor of marketing at the W. P. Carey School of Business, Arizona State University. Her research focuses on issues related to services marketing including customers' evaluation and adoption of services and customers' roles in creating service outcomes. She is also working with colleagues to establish the area of transformative service research, which is research that examines the relationship between service, service systems, and well-being. Her work has appeared in a number of journals including *Journal of Marketing*, *Journal of Consumer Research*, *Journal of Service Research*, *Journal of Consumer Psychology*, and *California Management Review*.

Dr. Ostrom was selected as the 2004 Arizona Professor of the Year, an award sponsored by CASE and The Carnegie Foundation for the Advancement of Teaching. In 2007 she was recognized as the ASU Parents Association Professor of the Year and received the Huizingh Award for the Outstanding Undergraduate Professor in the W. P. Carey School of Business. She was named an ASU President's Professor in 2011. She has served as the president of ASU's Distinguished Teaching Academy. In her role with the Center for Services Leadership, she has shared the service blueprinting technique with small startups to Fortune 500 companies to help improve their service processes and develop new service offerings. Dr. Ostrom holds a B.A. in psychology from Arizona State University. She also graduated from ASU's Honors College (now Barrett, The Honors College). She earned a Ph.D. in marketing from Northwestern University.

Mary Jo Bitner is the executive director of the Center for Services Leadership, PetSmart Chair in Services Leadership, and professor of marketing at the W. P. Carey School of Business, Arizona State University. In her 25-plus years as a professor and researcher, Dr. Bitner has been recognized as one of the founders and pioneers in the field of service marketing and management worldwide. At ASU she was a founding faculty member of the Center for Services Leadership and has been a leader in its emergence as the premier university-based center for the study of services marketing and management. She also serves currently on the board of the American Marketing Association.

Dr. Bitner is co-author of a leading textbook in services: *Services Marketing: Integrating Customer Focus Across the Firm*, McGraw-Hill, 6th edition, 2012.

The book is used at the undergraduate and graduate levels at universities across the United States and globally, and has been translated into more than eight different languages. In the mid-1990s, Dr. Bitner led the development of the W. P. Carey M.B.A. marketing and service leadership specialization, a unique full-year focus within the nationally ranked W. P. Carey M.B.A. The degree specialization has existed for more than 15 years and alumni now work in companies worldwide, leading the implementation of service and customer-focused strategies.

In 2003 Dr. Bitner was awarded the Career Contributions to the Service Discipline Award presented by the American Marketing Association. She was also named an IBM Faculty Fellow for her leadership and pioneering work in service science. At ASU Dr. Bitner has received the W. P. Carey School of Business Graduate Teaching Excellence Award and the award for Outstanding Professor, Ph.D. Programs. She serves as a distinguished faculty member at Fudan University, Shanghai, China, and has taught for many years in ASU's EMBA program in China.

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Prior to joining the center, Kevin was a management consultant with significant experience advising senior business leaders. He most recently was vice president of consulting solutions at Synovate in Scottsdale, Arizona. In this role he co-led the growth and management of the consulting solutions group by driving marketing and business development, leading client engagements, developing intellectual property, and transferring knowledge. Before joining Synovate, Kevin was a senior practice associate at McKinsey and Company in Los Angeles, California. He was a core member of the firm's service strategy and operations practice. While at McKinsey he led and supported numerous client engagements and developed firm expertise in a variety of areas including service growth for product-based companies, customer care in the new economy, and revenue generation through contact centers. Kevin earned his B.A. in political science from the University of North Carolina at Charlotte and his M.B.A. in services marketing from Arizona State University.

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About the Center for Services Leadership

The Center for Services Leadership (CSL) is the first global institution of its kind devoted to research and education in the service field. This groundbreaking research center within the W. P. Carey School of Business at Arizona State University concentrates on expanding service innovation by combining the latest scientific insights from the academic world with the best from organizational ingenuity and strategy. The CSL was created in 1985 to pioneer the study and science of service. Today, through its renowned global faculty network, problem-focused research, and professional development and education, the CSL remains at the forefront of the service industry—one of the fastest-growing sectors in the global economy.

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Endnotes

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- 42 We would like to thank Craig Fennell, executive director of student financial assistance, and Susan Sedik-Barker, director client services-student financial aid, at Arizona State University for their informative discussion and insights concerning the financial aid process as well as their commentary concerning the blueprint that we developed.
- 43 As part of the Higher Education Opportunity Act of 2008, Congress required the Department of Education to create a net price calculator template and each institution to include one on its own website by fall 2011 to help individuals estimate the net price of attending a specific institution. Net price is the "dollar amount that must be paid after subtracting financial assistance from the cost of attending (iii)." Please see: Advisory Committee on Student Financial Assistance, "The Bottom Line: Ensuring that Students and Parents Understand the Net Price of College" (2011).
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