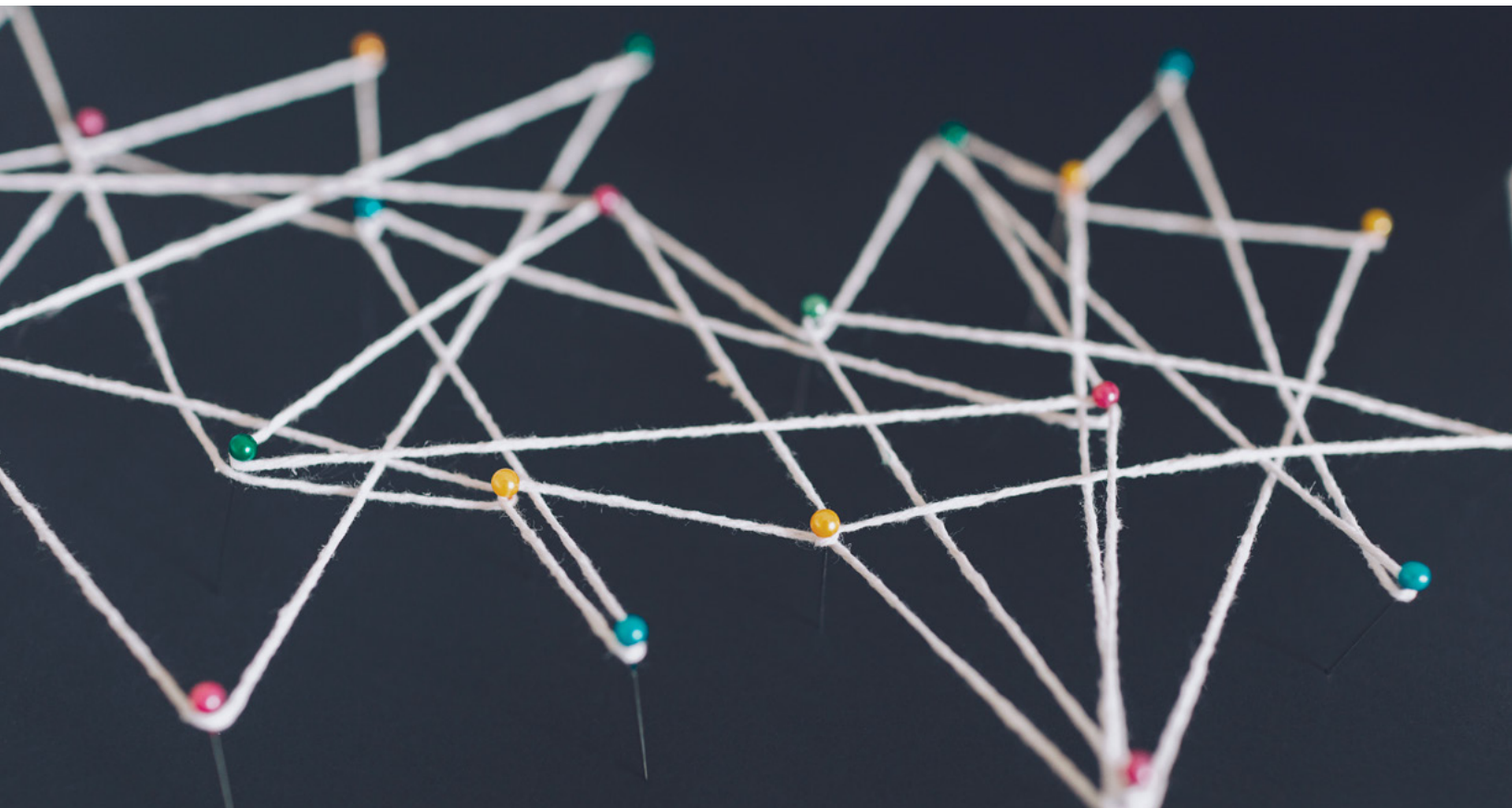# McKinsey & Company

Operations Practice

Unlocking enterprise efficiencies through zero-based design

Zero-based design allows even mature companies in asset-heavy industries to cut costs and complexity without compromising safety, quality, or customer trust.

by Charles-Henri Marque, Rohit Panikkar, and Sai Tunuguntla

Across virtually every industry, startups are gaining ground, if not disrupting the status quo, with new operating models that allow them to design, test, and scale better products and services, faster than ever. This ability has raised customer expectations, putting added pressure on incumbent businesses.

Of course, startups have an innate advantage: a clean slate from which to design operations and processes. Incumbents, on the other hand, contend with rigid and ingrained processes and systems, and a well-worn, usually siloed, organizational structure that slows decision making. Other constraints, such as a legacy infrastructure or the lack of the right talent, skills, and capabilities, make change slow and difficult at a time when rapid response is needed more than ever. And in this environment, operational-excellence efforts tend to emphasize the continuous improvement of current-state work, rather than the kind of radical, step-change reimagination that has become a business imperative in the digital era.

Yet it is indeed possible for mature companies—even those in asset-heavy industries—to cut waste and complexity and accelerate processes dramatically without compromising safety, quality, or customer trust. While they can't exactly work from a clean slate, mature companies can sweep away many of the self-imposed barriers to achieve results that more closely align with their priorities. This approach is called zero-based design.

Some organizations know their internal processes need radical change—fast. They use zero-based design to deliver substantial results despite legacy business' usual constraints of protracted product-development cycles and complex processes. Indeed, zero-based design isn't new: it has already proven its worth in product design and more recently, in redesigning customer-facing processes. Its usefulness doesn't stop there: zero-based design holds promise in delivering quantum-leap performance improvement in the

internal operations of many types of enterprises, regardless of industry.

Legacy approaches are bogging operations down

Many companies, especially those dealing with rapidly changing requirements and large asset bases, face three major challenges.

Pressure to streamline operations. Demand is escalating, but cycle times remain long. Telcos are a prime example: while demand for mobile services has exploded, it can still take up to 12 months in some markets to deploy services in new areas. Contrast that with product launches enabled by agile methodologies, where new releases take weeks, rather than months—or even years.

Labor-intensive core processes. Core enterprise operations such as research, design, development, and implementation still take considerable resources and time. Telco network operations, for instance, account for between 20 and 40 percent of total telco operational expenditure and 20 to 30 percent of the total workforce.

Outmoded approaches to process design. When companies attempt to shoehorn new technologies into old approaches and processes, they often find they cannot realize the full value they hoped to achieve. Digital tools and technologies have so radically changed products and services, and how they are conceived and delivered, that organizations instead face a fundamental rethinking of how processes are designed.

Overcoming these challenges can be difficult for many reasons. Decision makers may not see the potential impact of a change program, or know where to start, or how to prioritize implementation. The fragmented ownership of processes or activities compounds the inertia. For some companies, the problem isn't getting started, but rather sustaining the improvement: they may

claim success prematurely, leaving them in pilot purgatory. For others, attempting to resolve these complexities from their current base hampers their thinking and creativity.

How to spur fresh thinking

It's hard to think outside the box when the box remains your only frame of reference. Zero-based design works by tackling institutionalized ways and ingrained thinking and injecting fresh perspectives, so that organizations can make the most of the latest tech-enabled and digital solutions. This is possible by taking new approaches even in the most complex organizational structures.

Eliminate all existing constraints to arrive at an optimal, "sunny day" scenario. Many processes instituted years ago in a different operating

environment may rely on technologies that are now out of date. Zero-based design starts by revisiting old assumptions to design the most optimal process possible today. The result is the "sunny day" scenario: it represents the most dramatic improvements conceivable in efficiency and effectiveness, such as a 50 percent reduction in lead times across the board.

Getting to the sunny day calls for bringing fresh ideas for each key process and its component activities—including opportunities for digitization, analytics, and automation across the value chain—and then stepping back to see how those ideas might work together (Exhibit 1).
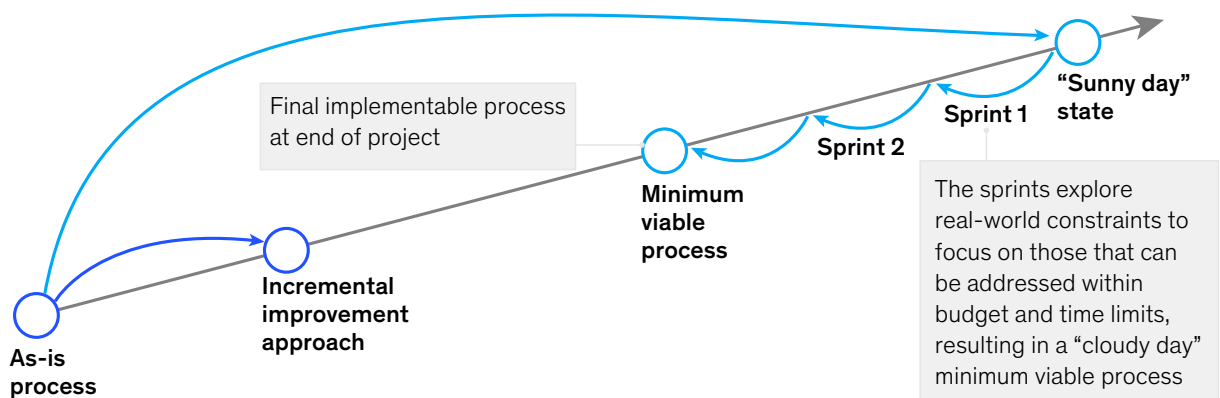
Root out the redundant, the no-longer-relevant, and the unnecessary. The next step

Exhibit 1

Zero-based design's reach exceeds that of traditional improvement approaches.

Traditional approaches take significant time and effort to:
• Detail the many levels of the as-is process
• Identify and remove waste
• Implement incremental improvements

Final implementable process at end of project

"Sunny day" state

Sprint 1

Sprint 2

Minimum viable process

The sprints explore real-world constraints to focus on those that can be addressed within budget and time limits, resulting in a "cloudy day" minimum viable process

Incremental improvement approach

As-is process

Zero-based design is an **outcome-focused approach** that involves:
• Starting with an optimal clean-sheeted process
• Iteratively reintroducing and addressing constraints based on what is necessary to deliver the process in reality

is to eliminate procedures that are duplicative or no longer add value. Some, such as requiring paper signatures when electronic equivalents have the same legal effect, are fairly easy to see. But it's equally important to scrutinize dependencies that may no longer be relevant, as doing so can identify activities that could be carried out in parallel rather than sequentially. When a customer's transaction history is instantly available, there's little need to hold up processing a new order while standard sales terms are reconfirmed.

Tap inspiration and expertise from multiple quarters to address constraints. Relying on the very people who are carrying out today's processes to devise new solutions is often impractical. Yet it's often surprisingly difficult to expect someone stepping into a new role to envision a new way of executing. With ZBD, companies look for inspiration and ideas from other areas in the organization, from other companies, and even from outside the industry to learn how others have solved analogous problems. Technical and other experts can help examine how people execute each activity.

Emphasize collaboration. Working together, especially in a cross-functional way, can spark creative problem solving and orient everyone around the end goal, rather than around the interests of their functional area. Taking a value-chain perspective helps by enabling people to see how their work contributes to an entire process—and how their current practices may complicate steps further down the line if, for example, the data they produce must be reformatted for another function to use it effectively.

Add constraints sequentially and only at the end to arrive at a "cloudy day" scenario. Zero-based design keeps the process realistic and flexible enough to accommodate undesirable outcomes. It does so by following a clear gating process in which the constraints that truly cannot be addressed are added only at the end of the process. This sequence supports unconstrained, creative thinking in the early stages of zero-based design, thus producing a final outcome—a minimum viable process, or MVP—that that usually ends up significantly better than an incremental approach can achieve.
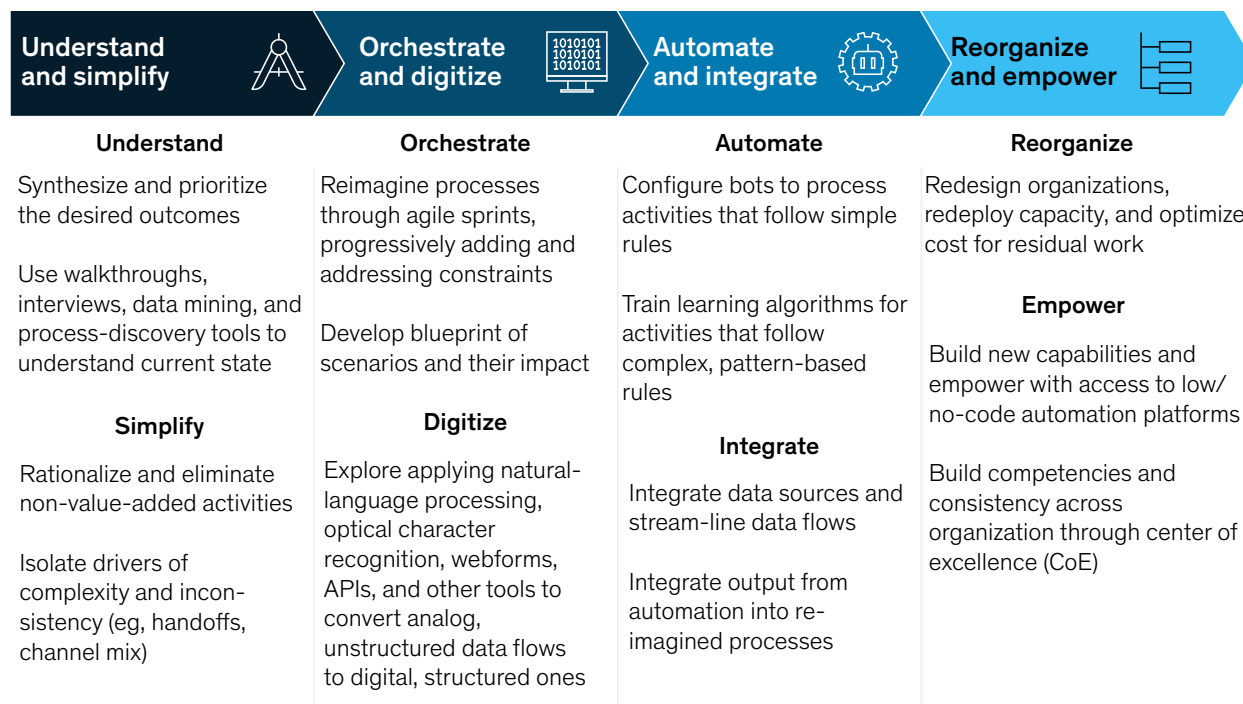
Four steps to streamline and redesign

With ZBD as the cornerstone, a four-step methodology draws on agile principles (such as continuously testing, iterating, and refining ideas) to offer a repeatable, scalable means for revamping internal processes (Exhibit 2).

— *Understand and simplify.* First, identify and prioritize work, which includes managing demand and getting rid of unnecessary tasks. This step involves mapping activities that will advance the organization toward the outcome it seeks, while eliminating those actions that add little value or that are sources of undue complexity. Mapping needn't be an arduous, manual effort: technology-enabled methods, from process mining to process discovery, make mapping much easier and more robust than it once was.

— *Orchestrate and digitize.* Redesign processes and workflow using zero-based approaches. Seek points along the value chain that are ripe for digitization and develop a range of options, from an MVP to a finished, ideal-state result. This step also entails deploying technologies and digitizing both structured and unstructured data.

— *Automate and integrate.* Review options to automate those parts of the process that are digitized, either in rule-based ways through the use of bots or workflow tools, or pattern-based ways via algorithms and analytics. Integrate data sources and streamline data flows, and integrate the outputs from the newly automated activities into the redesigned processes.

— *Reorganize and empower.* For those elements of the process that must remain manual, redesign organization structures, redeploy capacity, and seek efficiencies by, for example,

Exhibit 2

The four steps of zero-based design help scale operations sustainably.

Understand and simplify	Orchestrate and digitize	Automate and integrate	Reorganize and empower
Understand	**Orchestrate**	**Automate**	**Reorganize**
Synthesize and prioritize the desired outcomes	Reimagine processes through agile sprints, progressively adding and addressing constraints	Configure bots to process activities that follow simple rules	Redesign organizations, redeploy capacity, and optimize cost for residual work
Use walkthroughs, interviews, data mining, and process-discovery tools to understand current state	Develop blueprint of scenarios and their impact	Train learning algorithms for activities that follow complex, pattern-based rules	**Empower**
Simplify	**Digitize**	**Integrate**	Build new capabilities and empower with access to low/no-code automation platforms
Rationalize and eliminate non-value-added activities	Explore applying natural-language processing, optical character recognition, webforms, APIs, and other tools to convert analog, unstructured data flows to digital, structured ones	Integrate data sources and stream-line data flows	Build competencies and consistency across organization through center of excellence (CoE)
Isolate drivers of complexity and incon-sistency (eg, handoffs, channel mix)		Integrate output from automation into re-imagined processes	

outsourcing these activities. Then, build new capabilities and empower people with intuitive tools, such as low- or no-code automation platforms, so they can develop their own shortcuts to make their work easier.

To illustrate how ZBD works, consider the case of a large telco that urgently needed to expand its mobile network capacity, but deployment was taking anywhere from 12 to 18 months. The company's ultimate objective was threefold: eliminate the multiple bottlenecks that plagued its operations, reduce the protracted cycle time, and stay within budget.

Teams drawn from all relevant areas collaborated through multiple workshops to analyze and brainstorm a new way. First, they broke down the steps for a typical deployment, noting how much time each stage took, and seeing what the work stream looked like in order to understand process dependencies.

Overall, the teams identified five primary roadblocks:

— Long procurement lead times

— The lack of a long-range view, which impeded early procurement of long-lead-time items as well as site approvals and negotiations

— A lengthy permitting process

— A mostly manual documentation process, which left the company without a single authoritative source of project documentation

— Multiple acceptance tests, rather than a single, full-site test

Compounding the delays, network-deployment steps were rigidly sequential, with teams having

to wait for one step to be completed before proceeding to the next.

The most important simplification was to reduce dependencies and unnecessary sequencing so that more activities could proceed in parallel. For example, standardizing and initiating procurement could begin at the same time as site design and the permitting process. Digitizing site identification, through analytics and satellite mapping, could cut delays for current and future projects by establishing an electronic inventory of potential locations. Wherever possible, teams also sought opportunities for advance planning.

This zero-based approach allowed the process-redesign team to arrive first at a sunny-day option with no constraints, and then, after adding progressively more constraints—such as the need to purchase the land underneath proposed towers—it arrived at an MVP.

The traditional process-improvement methods that it had tried in the past could shave only three to five weeks off of the total time, for a total reduction of only 4 percent. Zero-based design's sunny-day process projected a time reduction of more than two-thirds. A more realistic MVP,

which accounted for more constraints, still cut the full cycle time by about half, or six to eight months—with additional improvement possible as experience began to yield further efficiencies (Exhibit 3).

Institutionalizing ZBD through a center of excellence

Zero-based design (or redesign) is not a one-and-done effort; it's an iterative process by which leaders can constantly pressure-test and rethink both their processes and their goals as conditions and needs change. A ZBD center of excellence (CoE) is an efficient and effective way to extend ZBD throughout an entire organization, both for internal processes as well as for external, customer-facing journeys (Exhibit 4).

To illustrate how a center of excellence helps embed ZBD in an organization, consider the experience of a financial institution that needed to rework outdated processes and become more customer-centric. To withdraw money from an account, a customer had to fill out several forms (including providing redundant data) and then wait at least 20 days for the funds to hit their bank account. The customer had to repeat those same
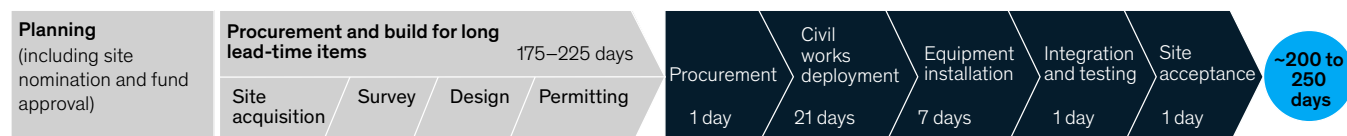
Exhibit 3

A telco used zero-based design to cut cycle time by more than 50 percent.
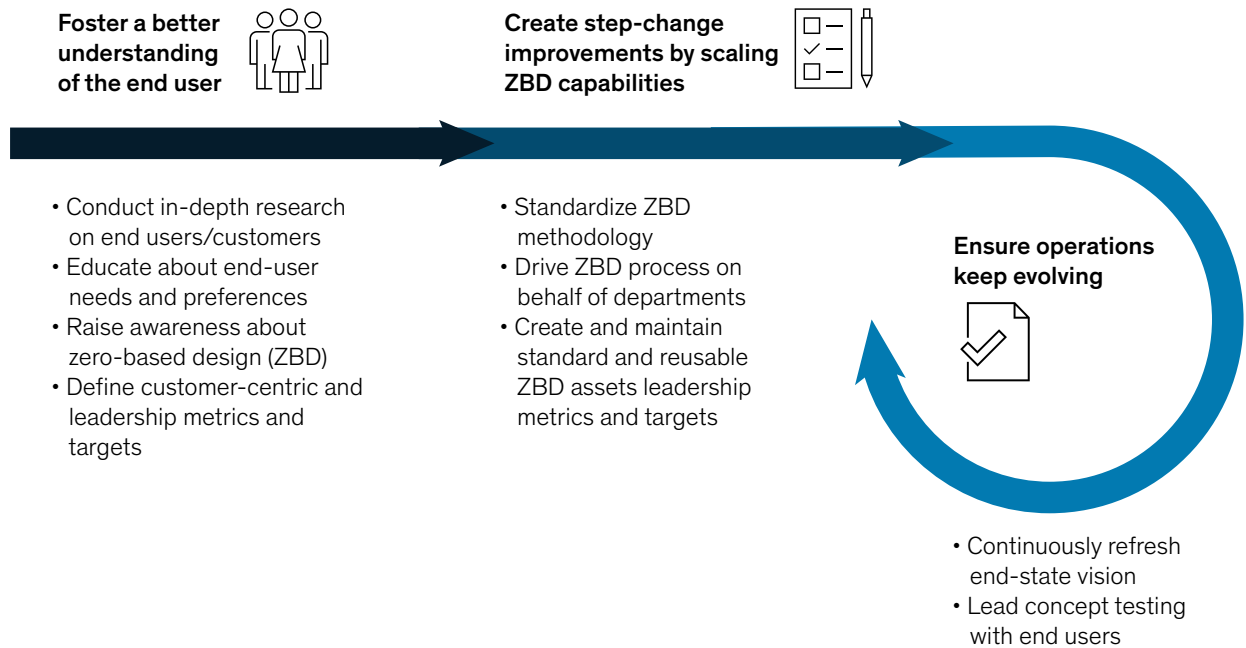

Traditional process

| Planning (including site nomination and fund approval) | Procurement 30–40 days | Site acquisition 270 days | Detailed design 10–15 days | Civil works deployment 60–150 days | Equipment installation 7 days | Provision and integration 40–60 days | Testing and verification 30–60 days | Site acceptance | ~450 to 600 days |

New process (for implementation within 6 months)

| Planning (including site nomination and fund approval) | Procurement and build for long lead-time items 175–225 days — Site acquisition / Survey / Design / Permitting | Procurement 1 day | Civil works deployment 21 days | Equipment installation 7 days | Integration and testing 1 day | Site acceptance 1 day | ~200 to 250 days |

[1] Assumes 6 working days in a week; ~5 weeks in calendar days.
Source: Zero-based design workshop

Exhibit 4

A zero-based design center of excellence oversees a range of activities.

Foster a better understanding of the end user

- Conduct in-depth research on end users/customers
- Educate about end-user needs and preferences
- Raise awareness about zero-based design (ZBD)
- Define customer-centric and leadership metrics and targets

Create step-change improvements by scaling ZBD capabilities

- Standardize ZBD methodology
- Drive ZBD process on behalf of departments
- Create and maintain standard and reusable ZBD assets leadership metrics and targets

Ensure operations keep evolving

- Continuously refresh end-state vision
- Lead concept testing with end users

steps every month in order to access a continuous stream of income.

Meanwhile, amid customers' rapidly changing expectations for digital services, the company's sales started to fall. Leaders recognized that reinventing processes with the customer in mind was a priority—not only to boost customer satisfaction, but to jump-start a much-needed performance turnaround fueled by efficiency gains and accelerated growth.

To execute this shift, leaders set up a ZBD center of excellence with three purposes.

1. *Foster a better understanding of end-users.* The CoE was in charge of conducting in-depth user research to explore their level of satisfaction with products and services and their chief pain points. The CoE was also responsible for helping departments

understand how to apply data-based insights from the research to improve products and services. To raise awareness, the CoE launched formal communication initiatives (such as holding lunch-and-learn events), trained middle managers in ZBD, and helped functional leaders define a user-centric vision with the supporting success metrics that would guide the reinvention process over the long term.

2. *Create step-change improvements by scaling capabilities.* The CoE standardized and scaled the ZBD approach, facilitating sessions across departments to help teams redesign their processes and services. The CoE deployed its resources on both a push and pull basis—supporting not just the corporate center's transformation roadmap, but also areas in the organization that wanted to overhaul their operations proactively. The

CoE created and maintained a set of standard, reusable assets to hasten and amplify ZBD's dissemination throughout the company, including standardized workshop templates, a library of design standards, and a collection of inside- and outside-the-industry innovation tactics.

3. *Ensure continuous reinvention of operations.* Beyond its initial engagement within a department, the CoE assigns a designer to support operational teams over the long term to assess, test, and refresh their goals and the approaches they are using, so that the processes will function as intended. An integral part of the CoE's mission is helping teams uncover new insights on end-user preferences and fueling reinvention.

With ZBD as its backbone, the CoE spurred breakthrough improvements in technologies and process redesign. Over a span of nine months, the company launched a multi-channel service offering, gave customers the ability to withdraw funds automatically over the phone or online, and reduced cycle times by up to 90 percent and unit cost by up to 30 percent.

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Zero-based design's disciplined, transparent approach helps companies streamline and accelerate processes using a combination of tactics: weeding out the unnecessary, seeking solutions from beyond the industry, automating and digitizing activities and data, and reorganizing people and bolstering capabilities. But there are tradeoffs. Adopting ZBD requires resources, especially an open-minded sponsor who is willing to challenge conventional thinking and experiment. But for those companies willing to commit, ZBD can deliver a high return on investment—not only in savings but in the ability to capture new opportunities and build resiliency for the future.

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