

Applying lean production to the public sector

Governments at all levels must deliver more for less. The principles of lean manufacturing offer surprisingly apt solutions.

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Governments around the world want to deliver better education, better health care, better pensions, and better transportation services. They know that impatient electorates expect to see change, and fast. But the funds required to meet such expectations are enormous—particularly in the many developed economies where populations are aging and the public sector's productivity hasn't kept pace with that of the private sector. The need to get value for money from governments at all levels is therefore under the spotlight as never before. But cost-cutting programs that seek savings of 1 to 3 percent a year will not be enough and in some cases may even weaken the quality of service.

To address the problem, public-sector leaders are looking with growing interest at "lean" techniques long used in private industry. From the repair of military vehicles to the processing of income tax returns, from surgery to urban planning, lean is showing that it can not only improve public services but also transform them for the better. Crucially for the public sector, a lean approach breaks with the prevailing view that there has to be a trade-off between the quality of public services and the cost of providing them.

Lean basics

By improving an "operating system"—the configuration of assets, material resources, and staff—a lean approach can cut costs dramatically, typically by 15 to 30 percent. But cost savings are only part of lean's appeal, as demonstrated by the experience of Toyota Motor, the pioneer of these techniques in the 1950s and the only consistently profitable volume car manufacturer. Lean aims to optimize costs, quality, and customer service constantly. It does so by engaging and equipping employees to focus on creating and delivering value in the eyes of the customer and eliminating whatever doesn't contribute to this goal. Contrary to popular belief, lean is about making a process or operation "fighting fit," not about cutting it to the bone.

Many businesses have followed Toyota's lead and undergone a lean transformation. A major European telecommunications company, for example, successfully applied lean techniques to a problem that was leading many of its customers to switch to competitors: the repair of faulty telephone lines. The company found that its call center operators, diagnostics experts, and repair technicians operated as though they actually worked for rival employers. As a result, it took an average of 19 hours to repair a line. Using lean principles, the company realigned its organization and invested in the development of team leaders. In the first few months of its pilot project, productivity increased by 40 percent and recurring failures fell by 50 percent. The program was then rolled out across the company's national network, where it achieved similar success.¹ Likewise, a major European bank used lean techniques to reduce the processing time for mortgage applications to 5 days, from 35. Because fewer applicants dropped out of the process, the bank's revenues grew by 5 percent even as processing costs fell by 35 percent.

Is any of this relevant to the public sector? Not surprisingly, the concept and language of lean, rooted as they are in manufacturing, spark cynicism among many civil servants. Some feel that their priority should be matters of policy, not operations; others resent the notion that they are somehow part of a production line. Moreover, without the incentive of the profit motive, these government managers may believe they have neither a reason nor the levers to pursue a lean approach.

Yet practical experience suggests that they can. In a UK government office processing large volumes of standard documents, lean techniques achieved double-digit productivity gains in the number of documents processed per hour and improved customer service by slashing lead times to

fewer than 12 days, from about 40, thus eliminating backlogs. The proportion of documents processed correctly the first time increased by roughly 30 percent; lead times to process incoming mail decreased to 2 days, from 15; and the staff occasionally attains the nirvana of an unprecedented zero backlog. In a UK military armored-vehicle repair shop, a lean transformation generated a 44 percent increase in the availability of equipment, a 16 percent reduction in turnaround times, and a more than 40 percent increase in "right the first time" production. This achievement put about 40 more vehicles into operation at any one time. Moreover, the repair shop progressed from constantly missing its vehicle delivery deadlines to never missing them.

Persuading people to embark on the lean journey, where the last stop may be their own removal or reassignment, isn't easy. To succeed, public-sector organizations must find a way to align their growth strategy—providing new and better services at limited cost—with a regard for the interests of their workers. Although lean programs may cut the number of public-sector jobs, the goal is to make the remaining ones more rewarding. Incentives come from the prospect of more meaningful work, potentially with room for greater autonomy or a chance to develop new skills.

To be sure, some countries bar layoffs of public-sector workers. In other cases, union contracts make layoffs difficult. Even so, increasing operational effectiveness can free employees from one part of an organization to deliver new or better services in other areas, within existing budgets and without layoffs. For instance, in Germany, Berlin's state government, which is barred by law from firing its workers, took an innovative approach: people no longer needed in one area were placed in labor pools where they could be selected for new assignments in others. Even in the United Kingdom, where workforce rules are more flexible, the government reinvests much of the money saved through efficiencies in new services, and workers often take on new roles.

Organizations can apply lean principles in almost any environment where a process can be defined at the working level. Many public services—military logistics, employment agencies, hospital tests, social-security benefits, airport security checks—use processes that lend themselves to efficiency and quality improvements. Lean principles even apply in specialized fields such as legal casework and the development of policy. Work in these areas tends to be solitary, and the availability of e-mail and voice mail discourages face-to-face collaboration. Looking at such activities through a lean lens suggests that productivity can rise through more highly structured problem solving in teams, a more flexible allocation of resources, and a more sophisticated approach to managing knowledge. From an operational viewpoint, the aim is to smooth out the work flow.

The public-sector challenge

A lean system is designed to eliminate waste, variability, and inflexibility (see sidebar, "[Three sources of loss](#)"), though given the variety and complexity of many processes there can be no one-size-fits-all lean template. The needs of customers and the organization's goals and values drive the design. But some important themes and principles of the lean approach do pose specific challenges for public-sector organizations.

Taking the customer's perspective

All activities must be tested to ensure that they add value for the customer. Double-checking to be sure that they do reminds the organization of its purpose and ensures that processes are efficient. A car manufacturer or a retailer that fails to add value finds that its customers go elsewhere. But in government departments and other public organizations, putting customers first (even if you could identify them) may be more difficult.

One reason is a lack of competition. Customers of the government—job seekers or patients, for example—usually have no choice of provider. The demands of the customer, who may never even appear in the office, rarely come into focus. Much of the public sector remains supplier led, not customer led. But this norm could be changing. In the United Kingdom, for example, the government is introducing reforms that would allow people to choose where they go for medical treatment. Funding would follow the patient.

Still, most public organizations do not have the agility or frontline empowerment to respond to the changing demands of their customers. Systems committed to universal access, such as the United Kingdom's National Health Service (NHS), do not have the luxury of refusing to serve a particular segment.

Defining value for customers in the public sector can also be elusive. Costs, quality, and lead times are all important considerations in a lean system, but social value and the equitable provision of services are more difficult to measure. In health care, for example, how can a government balance the desire to give current patients the best possible treatment with the need to deliver care to people still on the waiting list?

One way to identify—and then focus on—the customer is to discuss these issues with the staff, ensuring that any improvement effort is framed with the customer very much in mind. Even in processes such as the criminal-justice system, counting the accused person as the customer is necessary to reframe and challenge traditional ideas and approaches.

Defining and managing end-to-end processes

The developers of a lean system identify end-to-end processes from a customer's perspective and then design and manage the system to keep information and materials flowing smoothly through those processes. However, public-sector managers sometimes lack the skills, experience, and mindset to take this approach.

As in the private sector, the only way to understand and manage a process is to see how it works. Yet public-sector managers don't always see themselves as supervising or managing an "operation," and it is unusual for a single person to be responsible for an entire process. In addition, top-down targets tend to focus on a single part of the operation, to the detriment of the process as a whole. One mail-sorting facility, for example, set a target for dealing with incoming mail. The target diverted attention from outgoing mail, which sat in out trays for over two days.

A similar charge has been leveled at the requirement that 98 percent of accident and emergency patients in the United Kingdom must receive treatment within four hours. The risk is that local hospitals may merely shift the problem elsewhere—for example, by admitting patients to a holding ward to circumvent the four-hour deadline.

Compounding these difficulties is the growing propensity of governments to use outsourcing as a cost-cutting measure without always considering the impact of the outsourced service on the overall process flow. Outsourcing the work of hospital orderlies or transportation and logistics in a supply chain may reduce the fixed and variable costs of that particular activity. Yet these moves may drive up total costs and reduce the quality of service. Simply going for savings in one part of an organization may fail to improve its overall performance.

For all these reasons, senior executives must learn the details of any process for which they are accountable. In many cases, senior managers and executives are flying blind or, at best, relying on data and reports that fail to capture the complexity of the system and the experience of those working within it. To lead an organization that constantly strives to improve, the chief executive of a hospital, a social-service agency, or a prison must therefore spend at least one day a week on the "shop floor."

As work flows cut across organizational boundaries, it may be necessary to involve other departments or government agencies, possibly with different or even conflicting incentives. Consider the process of a trial. An effective process must deliver the defendant and all the relevant case information to court at the right time. At a minimum, the activities of the arresting officer, prison officials, prosecutors, victims, witnesses, and defense lawyers must be coordinated. Failures of coordination are common, leading to postponements, delayed judgments, and high opportunity costs.

To overcome such difficulties, decision makers should develop a shared understanding of the process. For the military repair shop mentioned earlier, this meant involving more than ten

departments and other stakeholders in a steering group and ensuring that the goals of the transformation process reflected their varied desires. But competing interests sometimes impeded the overall process, underscoring the need for changes extending well beyond the gates of the repair depot.

Exposing and solving problems

A key characteristic of a lean organization is its ability to improve itself constantly by bringing problems to the surface and resolving them. Here as well the public sector often finds itself in a weaker starting position, with gaps in skills and entrenched mind-sets.

In a lean system, the surface-and-solve dynamic works in much the same way as lowered water levels expose sandbars in a river. For ships to navigate it without running aground the sandbars must be dredged and the cycle repeated continually. The US Army Corps of Engineers has crews on the Mississippi, Ohio, and Illinois rivers from spring through November, dredging sandbars to keep the shipping channels open.

Many organizations keep their "water levels" high and deal with problems only if they break the surface. Such a system masks underlying problems. Rather than removing them, managers in the public sector are often tempted to add something to the system. Government departments around the world have, for example, tried to improve their processes by installing expensive IT systems. Many have delivered benefits; some, such as the case-management system of the US Federal Bureau of Investigation, have been expensive failures. Huge benefits probably would have been more likely even without the new IT systems if government managers had tackled the underlying process problems. McKinsey analysis has repeatedly shown that most benefits from IT investments go to organizations that use IT to improve already well-managed processes.²

Moving from putting bandages over problems to solving them is particularly difficult in civil-service organizations because of a skill gap. Except in the military, operations management has not traditionally been a career path leading to the top tier of public service. Moreover, high-ranking civil servants tend to be organizationally and culturally removed from the delivery of frontline services, so policies are often made without a clear understanding of their effect on customers.

What's more, government reform programs are now under increasing scrutiny, which makes it difficult to uncover problems without embarrassment. A long-tenured manager needs courage to expose the waste that lies within his or her department or the deep-seated nature of its problems, especially if they can be resolved at little or no cost. The likely response will be, "If it was that cheap to fix, why wasn't it fixed before?"

Confronting such issues will demand brave leadership. Uncovering systemic problems within the public sector must become more politically acceptable; perhaps electorates will need to approve a "waste amnesty."

Developing a performance culture

When improving long-term performance is the goal, changing the process or the operating system will not suffice. The organization's culture must also change.


Some of these changes will be wrenching. A lean process, for example, requires a performance-tracking system that breaks down top-level objectives into clear, measurable targets that workers at every level must understand, accept, and meet. When performance isn't up to the standard, action is required. Tackling problems quickly and holding colleagues accountable for poor performance raises efficiency as well as morale. A lean process also tends to address the problem of "sticky" resources, prompting organizations to allocate them to shifting priorities more flexibly.

To mitigate the top-down nature of target setting, managers must often make changes themselves. In so doing, they should address the long-standing complaints of the frontline staff—complaints that

typically include management's lack of engagement, a greater desire for teamwork, and the need to tackle underperformance.

Profound cultural changes generally follow and reinforce the lean transformation. The organization's morale rises as participants build capabilities and see others developing as well. Consider the processing of documents in the UK government office discussed earlier. Before the change, employees worked largely alone, processing batches at their own convenience. After the lean transformation, they began working as a team, which made everyone's activities transparent. Every team member helped to solve problems when performance dipped, and everyone worked together to identify opportunities for further improvement. The new mind-set, brought on by the lean reconfiguration, contributed to a 60 percent increase in productivity. This new transparency, however, also raised a whole new set of tough questions, including, "What should our performance targets be?" and "What happens when those targets are not met?"

Applying lean is difficult in the private sector, and more so in the public sector. Successful lean transformations must close the capability gap early in the process, so managers and staff can make the transition to a new way of working. Closing the gap typically involves hiring a few people with lean expertise and experience from outside the public sector to seed the transformation and build new internal capabilities.

Lean requires more than the courage to uncover deep-seated organizational problems; it may call for the ability to deal with job losses as well. Without ducking this simple truth, politicians and public-sector leaders must outline the need for change, explaining its benefits and the logic of the planned approach. They need to tell all stakeholders, including civil servants and the public, a compelling story about the impact and long-term benefits of change. The challenge to do more with less will not go away. A lean approach, with its emphasis on lower costs but higher quality and customer service, is surely worth investigating. 

Three sources of loss

The overriding purpose of a lean system is to configure assets, material resources, and workers in a way that improves the process flow to the customer's benefit while minimizing losses caused by waste, variability, and inflexibility. These forms of loss are apparent in the public sector, where the consumer must often wait in lines, whether to receive health care, obtain a visa, or pass through security checks to board an airplane.

Waste. Toyota identified seven types of waste that inhibit a system's flows: overproduction, waiting, transportation, overprocessing, inventory, motion, and rework. Nearly all are relevant in the public sector. Take transportation. Is any movement of materials or people unnecessary? Does the movement of files needlessly lengthen an application process? In a prison system, is poor case management causing unnecessary and duplicative trips between prisons and courts?

Similarly, consider waiting times. Do any idle periods result from poor coordination between activities? Are expensive CT (computerized tomography) scanners, say, idle because of the booking system, and do hospital operating rooms start work late because of staff shortages? Likewise, is work or inventory being stockpiled? In a back-office process, for example, employees may be either overworked or idle because work often accumulates before moving to the next stage.

Variability. In the context of a lean system, variability is any deviation, in a service or product that creates unnecessary costs. In manufacturing, production variability might lead to the extensive reworking or scrapping of parts. In the public sector, variations in the way investigators gather evidence for a trial can lead to unnecessary acquittals. Often, managers use the inherent complexity of a process to justify a refusal to standardize any aspect of it. However, defining and sharing best practices can bring considerable benefits in quality and productivity.

Inflexibility. Finally, inflexibility refers to any systemic rigidity that prevents a supplier from meeting the customer's requirements at reasonable cost. In manufacturing, inflexibility could mean forcing customers to purchase a package of extras when they actually want only one. In the public sector,

staffing levels are often inflexible: the same number of police might work a shift on Monday night as one on a busy Saturday night. Too often, governments design public services on the one-size-fits-all model in the mistaken belief that a standard service necessarily offers economies of scale. In reality, different customer segments require different levels and types of service.

These sources of loss are strongly linked to the overall objectives of a lean organization: reduced costs, higher quality, and better customer service. In the lean approach, managers and staff tackle all three simultaneously to create a consistent flow.