The $3 Trillion Prize for Busting Bureaucracy
(and how to claim it)

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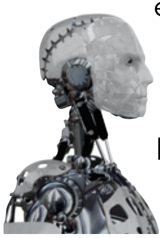
Productivity growth is the engine of economic prosperity. When productivity goes up, incomes rise; when it doesn't, incomes sag. It's no surprise, then, that many policy makers and business leaders are concerned about the post-recession slowdown in productivity growth. Since 2008, productivity gains have averaged a scant 1.24% per year. At that rate, it would take 56 years for real incomes to double.

Sluggish productivity growth isn't limited to the last decade. While US productivity growth averaged 2.36% per year in the eight decades preceding 1972, it has averaged just 1.59% in the years since, this according to data compiled by Northwest University economist, Robert J. Gordon.[1] This lackluster performance is mirrored across the developed world.[2] Reversing the productivity slump is, to quote Britain's Chancellor of the Exchequer, the "challenge of our time."[3]

Some, like MIT's Erik Brynjolfsson, are pinning their hopes on a "second machine age"—fueled by advances in robotics, artificial intelligence, and the Internet of Things. While these technologies will undoubtedly be transformative, they would have to be monumentally so to match the impact of indoor plumbing, electrification, the combustion engine, the telephone and air travel—the technologies that spawned the modern economy. And, as Gordon notes, there's reason to be skeptical. By his reckoning, the computer revolution, now forty years old, has thus far produced only a modest and short-lived blip in productivity growth.



We believe there's a more promising and less speculative route to boosting productivity: wring bureaucracy out of the US economy.[4] By our calculations, an excess of bureaucracy costs the U.S. economy more than $3 trillion annually, and in recent years, that tariff has been growing. A dramatic reduction in "bureaucratic drag" would give the US economy a significant productivity boost.

There was a time when bureaucracy was a new idea—and a blessing. Its stratified power structures, specialized roles and standardized tasks allowed organizations to achieve unprecedented levels of control and, thereby, efficiency. Absent bureaucracy, scientific inventions like the automobile would have remained mere curiosities.

But like all technologies, bureaucracy is a product of its time. In the century and a half since its invention, much has changed. Today's employees are skilled, not illiterate; communication is instantaneous rather than tortuous; and the pace of change is exponential rather than glacial. Nevertheless, the foundations of management are still cemented in bureaucracy.

Most organizations still concentrate power in the hands of a few highly paid executives. Alignment and conformance are, as ever, prized above all else. And though Blake's "satanic mills" have given way to cubicle farms, employees are still treated like semi-programmable robots.

Held hostage by this bureaucratic legacy, most organizations are poorly adapted for the knowledge economy, and even less so for the creative economy. They are unnecessarily elitist, overly politicized, change-phobic, and above all, disempowering. Therein lies the opportunity to reinvigorate productivity growth. While abolishing bureaucracy may seem to be an heroic undertaking, we believe it's both necessary and possible.

Here's our reasoning.

Bureaucracy is kryptonite to productivity.

This proposition is likely to be self-evident to anyone who's worked in a medium- or large-scale organization. Nevertheless, it's easy to become inured to the insidious ways in which bureaucracy undermines resilience, innovation and initiative. Herewith, a reminder.

- As an organization grows, layers get added and the ratio of managers to front-line staff goes up. Over time, the proportion of employees who have a direct customer-facing role—who are, in other words, directly exposed to market feedback—goes down. In consequence, those at the top become more isolated and the organization becomes less responsive to external stimuli.

- With additional layers comes a growing sense of disempowerment. The majority of employees see themselves as powerless to materially effect the organization's strategies and policies. This sense of resignation saps their initiative and erodes their sense of responsibility for issues not immediately relevant to their narrowly defined roles.

- The number of "sign-offs" required to advance an idea goes up, adding time and friction to decision-making.

- Internal boundaries multiply and become more rigid, making it difficult to recombine resources in response to emerging opportunities.

- Balkanization spawns a wide variety of cross-unit departments and teams charged with improving coordination. These matrix structures add overhead and blur accountability.

- Rapidly growing staff groups blanket the organization in policies and rules, further reducing the scope for initiative and innovation.

- Centralized functions are granted a monopoly over the provision of internal services such as HR support, IT and finance. In this regime, operating units are "customers" in name only. Mandates, cost allocations and hierarchical relationships substitute for freely negotiated contracts and market-based prices. Not surprisingly, the incentives for service providers to improve the efficiency and quality of their offerings is muted.

- With more layers and more specialized functions, it becomes more difficult to accurately assess individual contribution. Rather than being accountable for a P&L, employees are accountable for a variety of proxy measures. An increasing amount of time is spent wrangling over performance targets and evaluation criteria. As this happens, individual success becomes more the product of political acumen than genuine value creation.

- The demands of coordinating a growing enterprise leads to more reports and more meetings. A growing percentage of employee time gets consumed in efforts to keep the organization from collapsing under the weight of its own complexity.

- Executives, eager to preserve a sense of unity and control, push for more centralization, justifying the power grab with pleas for "harmonization," "economies of scale," "simplicity," and adherence to "best practices." Whatever the motive, the result is reduced autonomy for lower-level teams and, therefore, less flexibility and creativity.

These managerial diseconomies constitute a tax on human effort. To take a single representative anecdote, a hospital-based physician recently told us about her employer's policy governing the purchase of printers. The rule stipulated there could be no more than one printer for every eight employees in each clinic. Anyone wanting an exception had to appeal to a "printer committee." Supplicants soon realized that the hassles of

preparing and defending a requisition far exceeded any hoped for productivity benefits from an additional printer. Sadly, such examples of bureaucratic lunacy are legion.

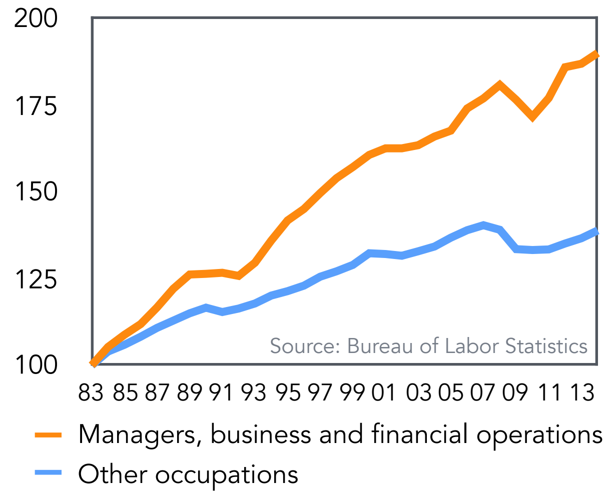
Bureaucracy is growing, not shrinking.

Despite all the hype about the "gig economy," more Americans are working in large, bureaucratic, organizations than ever before. In 1993, 47% of private sector employees worked in organizations with more than 500 individuals on the payroll. Twenty years later, that number had grown to 51.6%.[5] Large organizations, those with more than 5,000 employees, increased their employment share the most—from 29.4% to 33.4%. Meanwhile, the percentage of Americans who are self-employed dropped to an all-time low.[6]

Today, of the roughly 120 million Americans working in the private sector, 62 million work in organizations that are big enough to have the trappings of bureaucracy. To this number we must add the 22 million souls who work in public sector organizations, where bureaucracy seems as inescapable and unremarkable as coffee-stained carpeting.

Within these organizations, the bureaucratic class—employees who have executive, managerial, supervisory or administrative roles—has been steadily growing. Since 1983, the number of managers, supervisors and support staff employed in the US economy has nearly doubled, while employment in other occupations has grown by less than 40%. (See Figure 1).

Figure 1
Relative growth of managerial employment versus other occupations in the US
(1983 =100)



In some sectors, like higher education, the bureaucratic class has grown even faster.[7] In the University of California's sprawling network, the number of managers and administrators doubled between 2000 and 2015, while enrollment increased by just 38%. At present, there are 1.2 administrators for every tenured or tenure-track faculty member within the UC system.[8]

One might have expected successive rounds of downsizing to have pared back bureaucracy within the corporate sector, but this hasn't been the case. Between 2004 and 2014, the companies comprising the S&P 500 reduced their average cost of goods sold by 500 basis points. Yet over the same time frame, SG&A expenses, which include the costs of senior executives and corporate staffers, edged higher.

We have more bureaucracy than we need.

It could be argued that in a world characterized by increasing complexity, the growth of bureaucracy is inevitable. Who else but senior executives are going to address all those vexing new issues, like globalization, digitization and social responsibility? Who else is going to meet all those new compliance requirements around diversity, risk management and sustainability? And more prosaically, who, if not managers, are going to do the everyday work of planning, prioritizing, allocating, reviewing, coordinating, controlling, scheduling and rewarding?

Apparently most CEOs see it this way. If it were otherwise, more of them would be leading sustained campaigns to de-bureaucratize their organizations. In practice, most of the "wins" over bureaucracy—taking out a layer of management, reducing head office staff, or simplifying an irksome process—are small and quickly reversed. In this regard, look again at Figure 1. Notice how rapidly the thicket of bureaucracy grew back after it was pruned in the wake of the 2008 recession. While most of the CEOs we talk to agree that bureaucracy is lamentable, they also seem to regard it as unavoidable.

Yet there's compelling evidence that a significant portion of the bureaucratic levy on the US economy can be avoided—enough, in fact, to create a $3 trillion dollar upside. To see how, let's start by calculating the cost of the bureaucratic class.

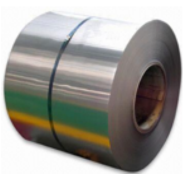
Based on data from the Bureau of Labor Statistics, we estimate that in 2014 there were approximately 18.5 million managers and supervisors in the US workforce, out of a total pool of 135.1 million employees (this latter number excludes farm and household workers and the unincorporated self-employed). In addition, we estimate there were 5.3 million individuals working in administrative support functions—including human resources, training, finance and accounting, supply chain management and compliance (but excluding IT).[9] (See Appendix I for information on how we compiled this and subsequent data).

A bureaucratic class of 23.8 million people works out to one manager/administrator for every 4.7 workers. If one excludes support staff and counts only line managers and supervisors, the implied span of control is 1:7.

In 2014, the bureaucratic class comprised 17.6% of the workforce and received approximately 30% of total compensation, or $2.7 trillion. The question is, how much of this cost could be avoided without imperiling economic output? We can get an answer by looking at the management practices of a small but growing number of post-bureaucratic organizations. Their experience suggests it's possible to run large, complex businesses with little or no bureaucratic overhead.

Among their number are Morning Star (the California-based tomato processor), W.L. Gore (a $3 billion high-tech company famous for its Gore-Tex® fabrics), Nucor (America's most profitable steel maker), Svenska Handelsbanken (a Stockholm-based bank with more than 800 branches across Northern Europe and the UK), Sun Hydraulics (a class-leading manufacturer of hydraulic components), and General Electric's Durham, North Carolina aviation plant (which assembles some of the world's largest jet engines).

The case of Svenska Handelsbanken is illustrative. Its return on equity has surpassed that of its European peers every year since 1971. In an organization of 12,000 associates, there are only three levels. Operating decisions are almost entirely decentralized. Each branch makes it own loan decisions, sets its own pricing on loans and deposits, controls its own marketing budget, runs it own website (on a shared platform), and serves all customer segments, from individuals to multinationals, within its catchment area. Nearly all of these practices run counter to conventional banking wisdom, which holds that to be efficient a bank must consolidate operational activities and centralize decision-making on matters like pricing and lending. Though a rebel, Svenska Handelsbanken has consistently posted industry-beating cost-to-income and loan-loss ratios.



Nucor, the most diversified steel company in the United States, is another exemplar of lean management. At $919,640, Nucor's revenue per employee is nearly twice that of similarly-sized US Steel, and nearly three times that of ArcelorMittal, the world's largest steel producer. In 2014, the Nucor's net income per employee, $31,100, was more than 10 times that of US Steel, while ArcelorMittal's net income per employee was negative. Nucor is comprised of 90 autonomous profit centers. Individual plants make product and pricing decisions and are responsible for their own product development. Self-managing teams within each facility oversee operations and are responsible for innovation, training and other tasks normally assigned to staff functions. With more than $20 billion in annual revenue and 23,000 employees, Nucor has a head office staff of fewer than 100 individuals, a tenth that of similarly sized rivals. As is true for Svenska, Nucor's return on equity and return on assets consistently exceeds that of its peers.

The average span of control in these and other vanguard organizations is more than double the US average. GE's Durham plant, to take a dramatic example, employs more than 300 technicians and a single supervisor—the plant manager. Not surprisingly, the facility is more than twice as productive as its sister plants within GE's Aviation division.

Delve deeply into the management vanguard, and you discover that their management practices are more alike than different. Typical features include:

- Small, autonomous teams that are empowered to make key operational decisions, including hiring, staffing, pricing, and equipment purchases.
- Compensation models that tightly link pay and profitability and encourage employees to think like business owners.
- Support services that are provided to operating units at cost (or are optional).
- A strong sense of competition and collaboration between operating units.
- A general aversion to formal titles and job descriptions in preference for dynamic, "natural hierarchies" based on demonstrated competence.
- Significant and on-going investment in the financial, commercial and technical skills of front line employees.
- A high degree of transparency around financial and operational information.
- Deeply shared norms and a strong sense of mutual responsibility for unit and enterprise success.
- Multiple channels for lateral communication and a reliance on ad hoc teams to address coordination issues.
- Radically simplified planning and budgeting processes which don't rely on top-down targets or operate on a fixed calendar.

In these organizations, the work of "managing" has been distributed to the periphery—to those who are closest to the marketplace. Since these individuals are operators first and managers second, they have neither the inclination nor the power to build bureaucratic fiefdoms, nor are they able to impose mandates on the rest of the organization. For them, management is a tool, not a job category.

By contrast, in traditional organizations one often finds a caste system that creates subtle yet tangible distinctions between "thinkers" and "doers." Front line employees often have little opportunity to develop their talents. As a result, latent capabilities remain dormant. Not so in the vanguard. Unfettered by bureaucratic shackles, employees are encouraged to upgrade their skills and take on new challenges. Competition is less for promotion than for the opportunity to work on high value problems. This ability to capture the wisdom at the bottom of the pyramid, as much as spartan overheads, is what makes the vanguard consistently more profitable than their peers, despite salary levels that often exceed industry norms.

Busting bureaucracy will raise output and enhance productivity.

Based on the experience of the vanguard, we seen no reason why it shouldn't be possible to increase the ratio of employees to managers and administrators from 4.7:1 to 10:1. Doing so would reduce the number of managers and administrators by 12.5 million individuals and trim payroll costs by $1.4 trillion.

In addition, there would be indirect savings. Bureaucrats have a penchant for wrapping their colleagues in red tape. In The Utopia of Rules, David Graeber bemoans the fact that "no population in the history of the world has spent … so much time engaged in paperwork."[10] A 2014 survey on the costs of bureaucratic busywork in Australia backs up Graeber's concern. In the study, Deloitte Economics estimated that compliance with internal rules and regulations consumed 6.5 hours a week of non-managerial employees, or 16% of their time.[11] The same study estimated that between 12 and 24% of those rules were "unnecessary or low value-added."[12] While external regulation is partly to blame for the soaring costs of compliance, Deloitte found that responding to internal requirements consumed twice as time much as dealing with external rules.

To estimate the costs of bureaucratic busywork in the US economy, we can extrapolate from Deloitte's study. If the 111 million American workers who aren't bureaucrats (or agricultural and home workers, or part of the unincorporated self-employed) are spending 16% of their time on internal compliance, and if 18% of that time is wasted (the midpoint in Deloitte's range of 12 to 24%), then 3.2 million person years are being wasted every year in responding to pointless bureaucratic requests.

In practice, we suspect compliance costs are substantially higher. The Deloitte study relied on data submitted by senior executives, who are likely to under-report the amount of time their subordinates spend on bureaucratic chores. Additionally, numerous polls have shown that managers and employees are deeply dissatisfied with the entire panoply of bureaucratic processes. (See Table 1 for a summary). On the basis of this evidence, it seems reasonable to assume that as much as 50% of all internal compliance activity is of questionable value.[13] If true, then half of the16% of time employees devote to internal compliance is non-productive. That translates into 8.9 million worker-years, or roughly $480 billion in compensation costs.

In total, then, there are 21.4 million individuals in the US workforce—12.5 million bureaucrats and the equivalent of 8.9 million paper-pushing subordinates, who are creating little or no economic value. This means the US could achieve current levels

Table 1
Dissatisfaction with Bureaucratic Processes

Function	Process	Evidence	Source
HR	Performance management	• 95% of managers are dissatisfied with their performance management systems • 90% percent of HR heads believe performance management systems do not yield accurate information • 59% of employees feel that reviews are not worth the time invested (56% say they do not receive feedback on what to improve)	Corporate Executive Board
		• 45% of HR executives don't think annual performance reviews are an accurate appraisal for employees' work	Society for Human Resource Management
	Leadership development /succession planning	• 50% of executives rate their leadership shortfalls as "very important," and only 6% of organizations believe their leadership pipeline is "very ready"	Deloitte
		• 36% of executives and senior leaders are satisfied or very satisfied with their company's succession management program • 23% of them, believe that they have a solid pipeline of "ready now" candidates	Korn Ferry
		• In the largest 1,000 US companies by revenue in 2008, only 44 out of the 80 new CEOs were promoted from within	Forbes
Strategy	Strategic planning	• Only 11% of senior executives of companies with more than $1 billion in sales believe strategic planning is worth the effort	Economist Intelligence Unit/ Marakon
Finance	Budgeting	• 60% of companies polled report their annual budget targets become obsolete by the second quarter of the year	Wall Street Journal
		• 46% of senior finance professionals believe their budget is a politically agreed number generated from the top of the business and not linked to operational reality	Association of Chartered and Certified Accountants/KPMG
		• Only 17% of managers surveyed believe their budget process is effective • 70% of companies have implemented two or more significant budgeting process changes in the past five years without receiving a significant return on their investment	CEB
	Capital allocation	• Only 32% of companies surveyed rate themselves as very or extremely effective at capital allocation	McKinsey

of economic output with 15% fewer people in the the labor force. That would boost GDP per capita from $120,000 to $141,000.

The goal, of course, is not to put 21.4 million people out of work, but to redeploy them into wealth-creating activities. If every one of these individuals was contributing $141,000 to economic output each year, rather than adding nothing, US GDP would grow by $3 trillion—and the figure could be even higher. Managers and administrators tend to be better educated than the workforce at large, so we should expect them to deliver better than average output per capita once reassigned to more productive work.

Then there are the large but difficult to quantify benefits that would come from a newly empowered workforce that is no longer paralyzed by process. More freedom and responsibility would mean more initiative, innovation and institutional flexibility—which would further boost productivity. These side benefits are far from trivial. For example, a number of highly respected leaders in the pharmaceutical industry have argued that the only way to raise R&D productivity, and thereby reduce the soaring costs of drug discovery, is to perform what might be termed a radical "burecotomy." Roger Perlmutter, the President of Merck Research Laboratories, suggested that a good start would be to "scrape off the the top five levels of management, including myself… ."[14]

Three trillion dollars represents 17% of US GDP. If the bureaucratic burden was eliminated in increments over the next ten years, productivity growth would increase by a compounded rate of 1.3% percent annum, essentially doubling the post-2007 productivity growth rate.

This productivity bonanza would be even larger outside the US. In 2014, the combined GDP of the 35 countries that comprise the OECD amounted to $49.7 trillion, of which the non-US share was $32 trillion. If bureaucracy is as ubiquitous in these economies as it is in the US, and there's little reason to believe it's not, there's another $5.4 trillion to be saved by eliminating the bureaucratic tax—an amount that exceeds the value of the entire Japanese economy.

To eradicate bureaucracy, we must first understand what we're up against.

In the battle against cancer, researchers have struggled mightily to identify the mechanisms that allow tumors to evade the body's defenses and grow unchecked. The task in reining in the growth of bureaucracy is similar. Why, despite the combined forces of earnings-obsessed shareholders, value-conscious customers, low cost competitors and put upon taxpayers, has bureaucracy been so difficult to eradicate?

First, bureaucracy is familiar. It is the managerial operating system of virtually every medium- and large-scale organization on the planet—from the Chinese prison system to the Catholic church, from Deutsche Bahn to NASA, and from Fortune 500 giants to Silicon Valley start-ups. Ask virtually anyone around the world to draw a picture of their organization, and you'll get a version of the familiar, pyramid-shaped organization chart—the exoskeleton of bureaucracy. A fixed chain of command, with hierarchically ordered and precisely delineated decision rights is one of humanity's oldest and most universal social structures. Because bureaucracy is everywhere, and everywhere the same, it is easy to regard it as the evolutionary apex of human organization.

Cultural norms are powerful, and those who defy them are often regarded as naive if not deluded. For those immersed in bureaucratic orthodoxy, radical cases of management innovation are likely to be seen as weird exceptions, rather than as positive deviants. For most managers, bureaucracy is not merely the "safe" choice, it's the only choice.

Second, this consensus is reinforced by what might be called the bureaucratic "ecosystem." Every organization is embedded in a web of institutional relationships, most of which are predicated on the belief that bureaucracy is essential. Consulting firms tell their clients that deep change is impossible without "strong leadership," thus reinforcing the assumption top management is solely responsible for initiating change. Government agencies demand evidence of regulatory compliance and are satisfied only when presented with the artifacts of bureaucratic control—dedicated roles ("chief compliance officer"), compulsory training and comprehensive reporting. The authors of business books tell managers how to get the most out of subordinates, giving credence to the view that managers are a special breed of uber-employees. A similar belief is implicit in the value proposition of most business schools: give us your tuition dollars and we'll fast-track you into the managerial elite. The recruiting industry, which classifies jobs by hierarchical rank, further reinforces the assumption that career success is calibrated by organizational rank.

The cohesion of the bureaucratic coalition presents a formidable barrier to would be management renegades. Their lot is not unlike that of an American tourist who rents a car in Britain. Yes, you can drive on the right side of the road, but the disincentives for doing so are manifold.

Third, bureaucracy is a massive, multi-player game. It's the field upon which millions of human beings compete for status and wealth. As in all games, some skills are more germane than others. While expertise and execution count for much in bureaucracies, other skills are often even more valuable: deflecting blame, defending turf, managing up, hoarding resources, trading favors, negotiating targets and avoiding scrutiny. To the extent these behaviors correlate poorly with value creation, they add to the management tax. Nevertheless, those who've excelled at the game of bureaucracy are typically unenthusiastic about changing it. Someone who's invested thirty years in acquiring the power and privileges of an executive vice-president is unlikely to look favorably on a proposal to downgrade formal titles and abolish the connection between rank and compensation.

Therein lies another clue to bureaucracy's persistence: it's well-defended by those who've done well by it. To understand the plight this poses for a would-be bureaucracy fighter, imagine yourself standing on a basketball court in the long shadow of Lebron James, the NBA star who gets paid more than $20 million per year to play for the Cleveland Cavaliers. "Mr. James," you say, "I know basketball has been good to you, but I think you should switch to volleyball." Anyone foolish enough to proffer this advice is likely to end up head down in the bleachers.

Finally, bureaucracy is hard to root out because it works—sort of. All those bureaucratic structures and systems serve a purpose, if only poorly. To simply excise them would create chaos. Imagine, for example, what would happen if an organization decimated the ranks of middle management without equipping front-line employees with the skills, incentives and information they need to become self-managing. Moreover, there's no well-trodden path for building a post-bureaucratic organization. While one can draw inspiration from the management vanguard, most of these companies were, like Lady Gaga, "born that way." From their inception they were built atop post-bureaucratic principles such as transparency, autonomy and meritocracy. To a significant degree, any brownfield organization that wants to overhaul its management model must invent its own map. The challenge is not unlike that faced by the first surgeons who attempted to transplant human organs: the stakes were high and the protocols were few.

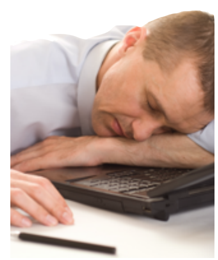
Despite this, bureaucracy can be beaten.

Bureaucracy is accepted, embedded, defended and useful. Any strategy for busting bureaucracy must confront these realities. While the hurdles are daunting, there's reason to be hopeful. Deeply institutionalized systems can be changed. The proof? Most of us are citizens, not subjects—our leaders are elected, not crowned. We view slavery as abhorrent, rather than divinely ordained. And despite centuries of patriarchy, we are committed to gender equality.

So what will it take to repeal the bureaucracy tax? Four things.

First and most critically, we need a revolution of the mind, born not of pragmatism and hopes of a productivity windfall, but of moral bravery. This is the lesson we learn when we look at the enlightenment, the abolitionist movement or the ongoing campaign for equal rights. Long-standing institutional realities change only when the beliefs that underlie them change. In this regard, no argument has proved more irresistible than the one which asserts that every human being should be free to exercise and profit from their natural gifts, and that human-crafted impediments to this pursuit are unjust.

As Thomas Paine put in Common Sense, a tract that proved pivotal to the American and French revolutions, "A long habit of not thinking a thing wrong gives it a superficial appearance of being right… ." Thus the first battle to be won is against indifference. How, for example, can we be indifferent to the fact that only a third of American employees are fully engaged in their work, this according to a 2014 Gallup survey.[15] That means that two out of three employees are not "involved in, enthusiastic about and committed to their work and work-place." This is shameful. Imagine, if you will, a car so poorly designed that two-thirds of the fuel pumped into the gas tank ran out onto the ground. Outside the US, the waste is even greater. Globally, 87% of employees are less than fully engaged.[16]



The implication: most organizations squander more human capability than they use. While we should be scandalized by the inhumanity of bureaucracy, we shouldn't be surprised. As Max Weber observed a century ago, "bureaucracy develops more perfectly the more it is 'dehumanized,' the more completely it succeeds in eliminating…all purely personal, irrational, and emotional elements which escape calculation."[17] The bureaucratic ideal is a passion-free workplace, and it's often achieved. Millions of employees show up every day at work physically, but leave much of their humanity at home—not by choice, but because they've learned that bureaucracies have little tolerance for curiosity, playfulness, intuition, artistry, affection, hope and all the other non-scriptable qualities that turn hairless bipeds into human beings. Little wonder that 94% of executives in a recent McKinsey & Company study said they were dissatisfied with their company's innovation performance.[18]

Of course there are times when individuals need to behave in highly scripted ways. You don't want the Foxconn employees who assemble your iPhone to go off script, nor do you want the pilot of your transcontinental flight to choose his own route through the sky. But if our organizations are going to become more adaptable and innovative, as they must, we need leaders who are unafraid to challenge the assumption that alienation is the inevitable price of efficiency.

When it comes to spurring social change, the most influential voices are often those that speak from within the system. That was true of John Newton, the English slave trader who became an Anglican priest. Newton's depiction of the brutal realities of slavery in his 1788 pamphlet, Thoughts Upon the Slave Trade, deeply influenced the young parliamentarian, William Wilberforce, who went on to lead a successful effort to eradicate slavery across the British Empire.

Bureaucracy won't start to crumble until prominent public and private sector leaders acknowledge the fact that bureaucracy's waste of human potential is morally indefensible. Luckily, some executives are speaking out.

During his highly successful tenure as CEO of HCL Technologies, one of India's largest IT vendors, Vineet Nayar publicly dedicated himself to "inverting the pyramid." Among other things, this effort spawned a platform where employees could post online reviews of the company's leaders and a "ticketing system" that gave employees the ability to call out imperious or incompetent staffers. While no Savonarola, Vineet wasn't afraid to poke the hornet's nest. A typical provocation: "We need to destroy the concept of the CEO. The notion of the 'captain of the ship' is bankrupt. We are trying to tell employees you are more important than your manager."[19]

An equally bold but less trenchant voice has been that of Jim Whitehurst, former COO of Delta Airlines and now CEO of the enterprise software company, Red Hat. In his 2015 book, The Open Organization, Whitehurst made a passionate plea for organizations built around community rather than hierarchy, and for a shift from careers based on hierarchical advancement to ones based on achievement and peer recognition.

And then there's Zhang Ruimin, chairman of the globe-spanning appliance maker, Haier, who's working to transform his company from a hierarchy to a "platform." Says Ruimin, "… we encourage employees to become entrepreneurs because people are not a means to an end, but an end in themselves. Our goal is to let everyone become their own CEO … to help everyone fully realize their potential."[20] To this end, Haier has divided itself into nearly four thousand "micro-enterprises" run by small, entrepreneurial teams.

These aren't the only voices calling for a management reformation, but more are needed. Just as moral indifference is catching, so too is moral courage. Brave souls create a path for those who are similarly principled but perhaps less daring.

Second, social change requires data. While moral suasion speaks to the heart, hard facts speak to the head, and both are important. Take the challenge of minimizing errors in the healthcare system. While any death due to a clinical blunder is a tragedy, it wasn't until 1999 that reducing medical mistakes became a national priority. The catalyst? A study by the Institute of Medicine which revealed that as many as 98,000 lives were being lost each year due to preventable errors.[21]

Bureaucrats pay attention to things that can be measured.[22] That's why every organization needs to calculate its BMI, or "bureaucracy mass index." (Table 2 suggests some key metrics to track.) The first step is to establish a baseline. The goal is to steadily shrink the BMI, but that won't happen unless the costs of bureaucracy are visible to the entire organization, and to key stakeholders as well. A decade ago, few companies reported on environmental impact—now many do, thanks to pressure from governments, customers and environmental advocates. Similarly, shareholders and other interested parties need to press leaders to detail the costs of their obsolete management practices and to share their plans for reducing those costs.

Metrics are important, but not enough. A CEO may regard bureaucracy as flawed and expensive, and still be stuck. Leaders need credible examples of organizations that have learned how to achieve the goals of bureaucracy—control, coordination and consistency—while avoiding the costs. Role models are thus a third prerequisite for progress. While one might hope that more CEOs were bold pioneers, the fact is most of us wouldn't have sailed with Columbus—we'd have waited for the Tripadvisor review. Thankfully, though, the post-bureaucratic future isn't entirely terra incognita. The vanguard have sent back postcards (see Appendix 2 for a deeper look into some notable post-bureaucratic organizations).

Few executives have been inside of organizations where employees elect their leaders, or where compensation decisions are peer-based. Like 15th-century indigenous Americans, they've never seen a wheel. The solution is education. Leaders of every stripe need to spend more time out on the bleeding edge of management innovation, talking to and learning from vanguard organizations. Business schools need to reorient their curricula around next generation management practices and take a broader view of their mission. Beyond training the managerial elite, they need to think creatively about how they can upgrade the management skills of those at the bottom of the corporate ladder, as this is a critical precondition for conquering bureausclerosis.

Finally, any strategy for dismantling bureaucracy must deal with the political and operational impediments to change. There's no way to dismantle bureaucracy without redistributing power, and that's unlikely to happen without some blowback. Like most human beings, bureaucrats are reluctant to surrender their perks and privileges. Unlike lesser mortals, they have the power and the finesse to stymie top-down change without being labeled as mutinous. If asked to support the idea of busting bureaucracy, they will declare themselves "all in," but then quickly enumerate the countless practical challenges that must be throughly addressed before venturing forward. Their caution, is not entirely the product of self-interest. Nothing will sabotage the work of busting bureaucracy faster than an ill-conceived and radical move that creates operational chaos.

Given these realities, any top-down program for demolishing bureaucracy will almost surely fail. Look what happened when Zappos, the online shoe retailer, tried to replace its hierarchy with "holocracy," a recently-developed and much-touted system that replaces bosses with interlocking decision-making groups or "circles." While the goal was laudable—to eliminate managers and organizational politics—the top-down, all-or-nothing implementation of this new and mostly untested management model left Zappos in turmoil. Staff turnover jumped to an un-

Table 2
Indicators of Bureaucratic Mass

Overhead	Number of management layers Average span of control Management compensation as a percentage of total compensation
Friction	Percentage of time non-managerial employees spend on internal compliance The number of functional staff as a percentage of total headcount Average review time for budget requests
Insularity	Percentage of total headcount that is not directly customer-facing Percentage of time that managers devote to internal vs. external matters The cultural and professional homogeneity of the senior leadership team
Disempowerment	The percentage of employee time that is not self-directed The average size of units with direct P&L responsibility The percentage of employees who feel they have little or no influence over key operational decisions (e.g. staffing, pricing, compensation)
Conservatism	Extent of perceived disincentives to personal risk-taking Percentage of spending devoted to projects that are incremental rather than innovative The percentage of time functional staff spend on ensuring compliance versus supporting innovation and growth
Mistrust	Percentage of employees who do not have access to detailed financial performance information for their unit and others The degree to which compensation decisions are opaque rather than transparent The percentage of employees who don't have the opportunity to weigh in on key policy decisions

precedented 30% in 2015, and many of the employees who remained were confused and demoralized. In 2016 Zappos fell off *Fortune* magazine's Best Places to Work for the first time in 8 years.[23] While dismantling bureaucracy is, by definition, a revolutionary goal, it is best accomplished through evolutionary means. Individuals need time to discover, adapt and test alternatives to the bureaucratic status quo. There is also something fundamentally contradictory about using authoritarian means to implement a management model aimed at enhancing self-determination.

Even when the goals are modest, change initiatives fail more often than they succeed. What's needed is an approach that is iterative, collaborative and emergent; one that "rolls up" rather than "rolls out;" something more like a "hackathon" and less like "change management."

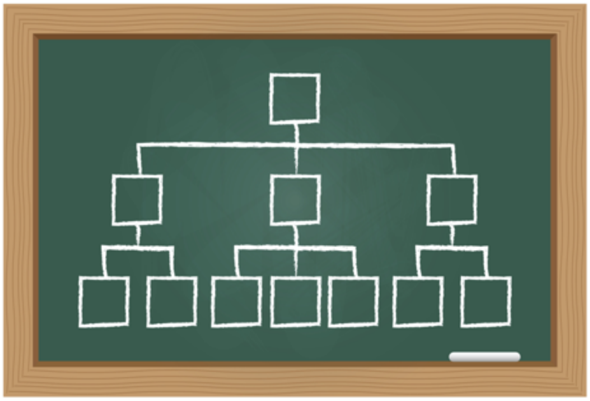
Organizations as diverse as Ford, Netflix, Google and NASA are using hackathons to invent new products and solve thorny operational problems. (Facebook's ubiquitous "Like" button grew out of a hackathon.) These focused and fiercely meritocratic initiatives bring together hundreds and sometimes thousands of individuals around pressing issues like reinventing education or improving the lives of people with dementia. Teams compete to come up with novel solutions and the most promising are fast-tracked to implementation. As a particular type of open innovation, hackathons rest on the maxim that with enough eyes, all bugs are shallow.

The goal, then, is a company-wide conversation where superfluous and counter-productive management practices are candidly discussed and alternatives proposed. The output of such a conversation isn't a single, grand plan for defeating bureaucracy, but a portfolio of risk-bounded experiments designed to test the feasibility of potential post-bureaucratic practices.

For example, a hack might propose that front line teams be given the right to interview and select new hires—a task heretofore performed by department heads or HR staff. Such an idea could be quickly tested in a small corner of large organization. Within a month or two one would know: Can we do this efficiently? Can the legal risks be mitigated? Does this produce better hiring decisions? Does it boost team morale?

Now imagine a large organization running dozens of such experiments every year. Not all will succeed, but the best hacks will be quickly replicated by units eager to reduce their BMI. Bureaucracy didn't burst forth fully formed 150 years ago. It emerged gradually as the product of relentless experimentation—and that's how progressive organizations will chart the course to a post-bureaucratic future.

And what about those leaders who find this future discomforting? Even with an open approach, care must be taken to develop a migration path that allows traditionally-minded leaders to grow into new roles. In a post-bureaucratic organization, power trickles up, not down. Authority depends on one's ability to attract followers, rather than on one's title. In this regard, decisiveness, superior information and credentials are less important than foresight, curiosity, problem-solving, integrity and collegiality. For many leaders, this represents a difficult transition. They will need mentors and coaches to help them retool. Though potentially expensive, this investment is warranted. You can't build a humane organization by leaving behind those who find the transition difficult. To do so would mock the goal of creating organizations that are fully fit for human beings.



Fifty years ago, the late Warren Bennis, a management scholar and leadership expert, predicted that humanity would soon be working in "adaptive-organic structures." Writing in 1988, the renowned Peter Drucker predicted that within twenty years the average organization would have slashed the number of management layers by half and shrunk its managerial ranks by two-thirds. Sadly, in the decades since these forecasts were made, the costs of bureaucracy have waxed not waned. Nevertheless, Bennis and Drucker were right about the future. They saw the faint dawn of the creative economy and knew that bureaucracy would one day become economically and socially untenable. That day has arrived. If we're going to recharge US productivity growth, we have to go to war with bureaucracy.

Defeating bureaucracy won't be easy, but like cleaning up the planet, tackling inequality or preserving biodiversity, it's a cause worth fighting for.

Appendix 1

Sizing Up the Bureaucratic Class

Estimates for the labor force and occupational mix

The Bureau of Labor Statistics collects labor force data through two surveys—the Current Population Survey (CPS) and the Occupational Employment Survey (OES). The CPS is the most widely-used survey in economic analyses—it forms the basis for official statistics such as the rate of unemployment, and underpins most studies of occupational trends. CPS data is on self-reported and collected through monthly surveys. OES data are gathered in a semiannual survey of establishments, and excludes unincorporated self-employed workers, agricultural workers, and house workers.

We based the overall US employment estimate of 135.1 million on 2014 OES data, since the unincorporated self-employed, agricultural workers, and house workers (totaling 11 million workers) are not relevant for our analysis of bureaucracy. The numbers of managers and administrators was estimated by drawing from both CPS and OES data. Specifically, we first computed the share of total employment for relevant occupational categories in both the CPS and OES, took an average of the shares for each occupation across the two surveys, and then applied the blended share to our estimate of the overall workforce of 135.1 million.

Our logic for a using blended approach was twofold. First, the occupational mixes in the two surveys for managers and administrators differ significantly—in the CPS data, managers and administrators make up 21% of the workforce, while in the OES data this share is at 14%. Second, there is no consensus among labor economists about which survey provides the more accurate estimates, so we were disinclined to treat either data source preferentially.

The CPS data likely suffers from management "grade inflation" since it relies on self-reported data. However, it is difficult to estimate the degree to which this factor biases the numbers.

Conversely, there are reasons to consider the OES estimates of managers and administrators as overly conservative. For instance, the estimated number of managers in the OES dropped precipitously after methodological changes introduced in the late 1990s—experts estimated that these changes undercounted managers by about 1.5 million.[24] And in the same way individual reporting may overestimate the number of managers in the economy, firm-reported data may tend to underreport the number of individuals in managerial roles. For example, "team leaders" who are in essence, full-time supervisors, may not be counted as such.

Estimates of administrative occupations

Here, our goal was to distinguish between line managers, i.e. those with direct line responsibility, and those in administrative support functions. Our estimates of the later category are based on our review of occupational category the BLS describes as "Business and Financial Occupations." Some of the large occupational groups in this category include accountants and auditors, compliance officers, human resource workers, management analysts, purchasing agents, and training and development specialists. We excluded from our estimates a number of occupations we deemed unlikely to be primarily administrative, such as claims adjusters, insurance underwriters, and personal financial advisors. We also did not include occupations related to IT support, since it is impossible to differentiate between IT professionals who are in line positions, and those that play support roles. Given the exclusion of IT-related occupations, our estimates are therefore likely to undercount the total number of administrators.

Estimates of manager and administrator compensation

We estimated compensation by multiplying average annual wages (obtained through the OES survey) for each occupational group (managers, supervisors, administrators, other employees) by the number of people in each group. To estimate total compensation, we increased wage compensation by a third, reflecting estimates from the BLS statistics that wages account for roughly two-thirds of total compensation.[25] This yields a total of \$9.1 trillion, which closely approximates the estimate by the Bureau of Economic Analysis of \$9.4 trillion in total labor compensation.[26]

Appendix 2

Introduction to the Post-Bureaucratic Vanguard

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Endnotes

[1] Robert J. Gordon, "The Demise of US Economic Growth: Restatement, Rebuttal and Reflections." National Bureau of Economic Research, Working Paper 19895, February 2014, p. 1.

[2] Of the 35 countries profiled in the OECD's 2015 *Compendium of Productivity Indicators*, 23 failed to match US productivity growth between 1995 and 2013. Most of the countries that surpassed the US were late-blooming economies such as Hungary, Poland, and Estonia. See *OECD Compendium of Productivity Indicators 2015,* OECD Publishing Paris, 2015, p. 23.

[3] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/443897/Productivity_-Plan_print.pdf

[4] A large and growing body of academic work provides convincing evidence that adopting "innovative" management practices—such as self-managing teams, compensation based on unit profitability and information transparency—can give organizations a productivity edge over more traditionally managed firms, consistent with the conclusions we've drawn from the study of Svenska Handelsbanken, Nucor, GE Durham, and other vanguard organizations. For a recent survey, see C. Syverson, "What Determines Productivity?" *Journal of Economic Literature, 2011, 49:2, 326-365,* and C. Ichniowski, and K. Shaw, "Connective Capital: Building Problem-Solving Networks Within Firms," NBER working paper, December 2009.

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[7] http://www.nytimes.com/2015/04/05/opinion/sunday/the-real-reason-college-tuition-costs-so-much.html?_r=0

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[9] To review this and subsequent calculations, please see the Appendix.

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[11] Deloitte surveyed a representative sample of 137 Australian businesses, who estimated the proportion of time spent by all employees on internal regulation for three employee levels: senior executives, middle management, and other non-administrative staff. According to the survey, non-administrative staff spent 6.4 hours a week complying with internal regulation. Based on a 40-hour work week, this amounts to 16% of their time. See "Get out of your own way: unleashing productivity," Deloitte, 2014.

[12] The Deloitte survey asked respondents to estimate the share of internal rules with "unnecessary or low value-added" processes by function. The range was between 12 and 24%.

[13] One reaches a similar conclusion when reviewing estimates of how much time is wasted in internal meetings, many of which are focused on governance, compliance and reporting. Several studies suggest that employees spend 15-20% of their time in meetings, and that between 20 and 50% of that time is wasted. See, for instance, M. C. Mankins, C. Brahm, and G. Caimi,"Your Scarcest Resource," Harvard Business Review, May 2014 (https://hbr.org/2014/05/your-scarcest-resource/ar/1).

[14] http://www.forbes.com/sites/matthewherper/2013/09/19/merck-rd-head-bets-slashing-bureaucracy-will-unlock-innovation/#2715e4857a0b7cb632911c8a

[15] http://www.gallup.com/poll/181289/majority-employees-not-engaged-despite-gains-2014.aspx

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[17]M. Weber, in G. Roth and C. Wittich (eds.), *Economy and Society.* Berkeley, California: University of California Press, 1978, p. 975.

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[19] Private conversation with one of the authors, Half Moon Bay, California, June 2008.

[20] Zhang Rumin, "Rendanheyi 2.0: Building an Ecosystem to Co-create and Win Together," address delivered at the Second Haier Global Forum on Business Model Innovation, Beijing, September 19, 2015.

[21] Committee on Quality of Health Care in America, *To Err is Human: Building a Safe Health System.* Washington DC: National Academy Press, 2000.

[22] Our research suggests that because the costs of bureaucratic drag are are usually ignored, managers often make unwise "cost saving" decisions. Typically, they will make a decision to centralize a key operational activity without calculating the financial impact of reduced engagement and local initiative.

[23] http://fortune.com/zappos-tony-hsieh-holacracy/

[24] See K. Abraham and J. Spletzer, "Are the New Jobs Good Jobs," in K. Abraham, J. Spletzer and M. Harper (eds.), *Labor in the New Economy.* Chicago: University of Chicago Press, 2010.

[25] http://www.bls.gov/news.release/pdf/ecec.pdf

[26] http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=1&isuri=1&903=5