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Regulatory Transformation: Lessons from Connecticut's Department of Energy and Environmental Protection

Theory to Practice

Abstract: *As economies and citizen priorities continue to evolve, governance practices must also adjust to changing circumstances and public expectations. This article explores the important topic of regulatory transformation, drawing from both the academic literature and the author's recent experience heading Connecticut's Department of Energy and Environmental Protection. The article makes the case for a focus on vision and execution as the critical starting points for good governance in the twenty-first century, drawing on best practices from the world of management. It then addresses some of the constraints faced by government organizations in this evolving era. Finally, the article identifies five core elements of regulatory excellence: integration, innovation, incentives, investment, and implementation.*

Practitioner Points

- Many regulatory agencies face a "transformation imperative" as a result of budgetary pressures and changing views about the proper scale and role of government.
- A framework of regulatory best practices for the twenty-first century is now emerging with lessons drawn from public administration, management, and government experience.
- Good governance requires clarity of vision and a focus on execution.
- Government agencies need to strive to be innovative and integrated in their practices, with a special focus on the incentives their rules create, sources of financing for investments that the regulated community will be required to make, and implementation.
- Regulatory success must be judged today in terms of "on-the-ground" outcomes achieved, with performance tracked through carefully constructed metrics.

Good governance has many facets. What constituted "best practice" in the regulatory domain a decade or two ago no longer seems adequate in light of new budget pressures, changing public expectations, and evolving theory. In this article, I offer a framework for regulatory agency leaders to consider as they address the "transformation imperative" that so many now face. In developing this framework, I draw from the scholarly literature, most notably from the fields of public administration and management with an overlay from the realm of administrative law, amplified by observations from my recent government service as commissioner of Connecticut's Department of Energy and Environmental Protection (DEEP).

Regulatory bodies from the federal Environmental Protection Agency (EPA) to state-level entities (including environmental, banking, and insurance departments) are under sharp scrutiny and intense budget pressures. Political leaders, media commentators, and business advocates are questioning both what these regulators do and how they do it. As a result, there is great pressure for better governmental performance and, in many cases, for significant regulatory reform.

As agency heads and senior management teams seek to transform their organizations into focused, effective, responsive, and efficient regulatory bodies, guidance on the elements of regulatory excellence is in high demand. This article offers a framework of regulatory best practices for the twenty-first century, starting with a focus on *vision* and *execution.* Using the scholarly literature as a starting point but refining the basic theories to reflect changing governmental realities and my own experience leading an agency facing a transformation imperative, I offer suggestions on how regulatory leaders should manage the process of reform. I also suggest what leaders need to do to develop strategies to promote integrated analysis and innovation as well as carefully designed incentives and financing structures. I emphasize that success in today's regulatory world must be gauged "on the ground" with carefully designed metrics that track implementation, highlight improved results, and honestly acknowledge shortcomings.

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Vision and Execution

With heightened pressures on governments at every level for better performance at lower cost, significant interest in regulatory transformation has emerged. At the federal level, President Barack Obama directed federal agencies to review their existing rules and regulations to determine whether they "should be modified, streamlined, expanded, or repealed" so as to make the regulatory framework more effective and less burdensome. The spirit of this initiative (implemented through Executive Order 13563, "Improving Regulation and Regulatory Review"), centered on a commitment to assess rigorously the real-world impacts of past agency efforts and ensure systematic attention to regulatory reform and refinement, applies broadly. Every regulatory body should commit to the same sort of systematic evaluation of the efficiency and effectiveness of its existing framework of rules and requirements as well as its success in terms of implementation.

Although scholars and management gurus all have their own lists of what is critical when it comes to organizational strength, almost all agree that the fundamental requirements are *vision* and *execution.* The same core principles apply in the regulatory realm.

Vision

Business leaders spend a great deal of time defining their organization's direction and "vision" and often working with their management teams to spell this out in a mission statement (Kotter 2007). Public policy makers should do the same, as a number of scholars have noted (Bryson 2011; Perry and Christensen 2015). While criticism of government for its inertia has become an easy charge to make, it is true that the direction of regulatory agencies will often be defined by past practice absent dynamic management that reorients and refocuses the organization's work. Without strong leadership, civil servants will do tomorrow what they did yesterday.

Clarity of vision about the agency's mission, core values, future direction, priorities and goals, and strategy emerges as the starting point for any process of regulatory transformation (Chun and Rainey 2005). As Perry and Christensen make clear in their *Handbook of Public Administration,* "Governance enterprises cannot be effective unless they know where they are headed. Effectiveness is not random; it begins with a clear mission, vision, and goals" (2015, 637). It is important to stress that the process of developing the vision can be as important as the words that get settled on. Participation in the discussion about the vision by all levels of the agency will be critical to creating a broad sense of "ownership" of the resulting direction and goals.

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Clarity on the mission represents a critical starting point for a process of regulatory transformation, but it must be followed up with a commitment to action and implementation. As Volcker (2014) observes, "Vision without execution is hallucination." Chaleef (2003) similarly argues that an organization's mission statement should highlight the "shared leadership" of all its members and trigger an iterative process of reframing the organization's practices and reinforcing a sense and shared responsibility for improved results. Metzenbaum and Vasisht stress that organizations should "translate their mission into specific goals, objectives, strategies, and suites of indicators they use to gauge progress on mission and know when mid-course corrections are needed" (2015, 2). Ultimately, while mission statements and a clear organizational vision are not the "be all and end all" of a transformation process, if done well (both substantively and through an inclusive process), they can set the stage for changed practices and provide a *reference point* for gauging progress on the way to regulatory excellence.

A consensus has also emerged that a "customer" focus—indeed, some would say a *compulsive* attention to feedback on performance—must be at the heart of any successful organization's vision and culture (Berry and Parasuraman 1997). Such a customer orientation, with a sharp focus on the needs of the public and the concerns of the regulated community, has not always been at the heart of government practice, but it should be (Baig, Dua, and Riefburg 2014).

Most everyone in business recognizes the value of innovation and the need to constantly update and refine their strategies and tactics—and therefore their products, services, and business models. Government entities have been much less focused on this transformation imperative. This, too, is a mistake.

Regulatory success today requires a deep commitment to continuous improvement and occasional fundamental restructuring. At Connecticut's DEEP, I made transformation of the state's environmental regulatory practices the central focus of my tenure as commissioner. As I discuss in detail here, we used a "lean" process, borrowed from manufacturing (Dennis 2010; Scorsone 2010), to completely rethink and reengineer all 26 of DEEP's permitting programs and dozens of other agency activities. This streamlining of operations allowed the agency to cope with significant human resource and budget reductions while delivering dramatic improvements in permitting speed, better targeting of limited regulatory resources to the biggest risks, elimination of a substantial backlog of pending permits, and greatly improved reviews from the regulated community (Esty 2014).

Execution

Nearly every set of core principles of quality management puts a major premium on *execution*—implementing the business strategy to deliver against clear targets such as sales growth or improved profitability. Government needs to put the same priority on implementation (Coglianese and Nash 2006). Success should not be judged by laws passed, regulations written, treaties negotiated, budget growth, staff hired, or other "input" metrics. Progress must be gauged by changed behavior within the regulatory community and better outcomes on core issues (Bryson, Crosby, and Bloomberg 2014). For an environmental agency, for instance, success should be measured by improvements in air and water quality, chemicals or waste managed properly, or lower levels of greenhouse gas emissions in the atmosphere. Efficacy and efficiency both need to be part of this calculus.

Execution in any organization requires a number of strategic elements, including strong leadership with a visible commitment to improved results and clarity about the need to do things differently and better. Almost every business has an unrelenting focus on cutting expenses and delivering greater efficiency, as executives understand that lower costs translate immediately into bottom-line results.

Without profit targets, governments have not prized efficiency as much, but they should. Support for regulatory actions varies with the public's sense of the appropriateness of the cost of the regulations (Bryson, Crosby, and Bloomberg 2014; Jacobs 2014). When the perceived regulatory burden is low, public support is easier to maintain. When regulatory costs are seen to be high relative to perceived gains, political and public scrutiny increases—and criticism often follows.

One key to regulatory excellence is thus to reduce compliance costs without lowering standards. In this regard, regulatory bodies should pursue efficiency as a critical priority and a key to minimizing the "administrative burden" the regulated community faces (Burden et al. 2012; Herd et al. 2013; Moynihan, Herd, Harvey 2014). Some of the same tools that the private sector deploys—such as redesigning operations for greater speed, efficiency, effectiveness, and transparency through lean analysis—should be more widely adopted in government (OECD 2014).

Communication is also critical to implementing new approaches to governance and thus regulatory excellence. Transformation is hard to deliver under any circumstances, especially in the public sector, where it can seem like there is little reward for doing new things. Clear marching orders from top management, particularly on the urgency of the transformation agenda, will be required. The difficulty of dislodging status quo thinking and practices is a reality everywhere. It is why so much emphasis in business is placed on creating a sense of a "burning platform," which implies that there is no choice but to jump to something new and make changed practices succeed. Government leaders need to drive innovation just as hard and establish the same sense of urgency about transformation. Likewise, there needs to be strong bottom-up information flow, both because successful change requires buy-in from the staff who will have to carry out reengineered regulatory programs and other processes and because the health of any organization depends on feedback (particularly bad news) getting from the staff to top management quickly (Sparrow 2000).

The management literature almost universally emphasizes *people* as a critical input to organizational success (Chambers et al. 1998). This priority holds equal sway in government. Recruiting top talent is essential. Well-designed training (and retraining) programs at all levels of the organization will be fundamental to broad-based understanding and acceptance of new goals and energetic commitment to their implementation (Kroll and Moynihan 2015).

Of course, even the best people will not be able to perform at high levels without adequate resources and technology support such as computers, video links, and access to online materials and databases. But governments often stint on these critical resources in the face of budgetary challenges. At the Connecticut DEEP, with the governor's strong support, we committed new resources (even at a time of budget cuts) to staff training and the upgrading of information technology and communications equipment in parallel with our lean transformation initiative. These commitments helped ensure the buy-in of the regulatory staff and contributed significantly to the positive results achieved.

Getting alignment and commitment to the transformation required for excellence across a regulatory staff can be much more challenging than it would be in the private sector, where foot draggers can be fired. But every organization can establish goals, incentives, and rewards to drive execution. Quantitative metrics and benchmarking are useful in this regard, both to judge individual performance and to gauge whether programs are delivering on their promise. In business, leaders are trained to be data driven and tough-minded about what is working and what is not. Every day, they evaluate initiatives and double down on those that are delivering the best results. But they also know that they must make choices, and when programs are not producing the anticipated outcomes, they shut them down and redirect those resources toward more promising strategies and projects. Government officials need to get better at "declaring failure" and redeploying scarce resources. Too often in a regulatory agency, the status quo holds sway long after it is clearly not working (Barber 2015).

Designing metrics for a regulatory agency takes more work than might be needed in a private sector entity, but the management benefits are just as significant.

Designing metrics for a regulatory agency takes more work than might be needed in a private sector entity, but the management benefits are just as significant. Good data, properly specified indicators, and carefully defined targets can help managers identify best practices (which can then be disseminated more widely); flag underperforming groups, individuals, or team leaders (allowing top management to prioritize them for transformation investments); and help develop materials that allow the agency to better "tell its story" to the public, legislators, and the media (Esty 2002). Of course, poorly crafted metrics can distort incentives and lead to subpar results. So my call for more quantitative performance measurement should not be mistaken for mindless "bean counting."

Governmental Constraints

While principles and practices from the world of management offer a valuable starting point for framing a structure of regulatory excellence, government agencies operate under some constraints that the private sector does not face. When one wields the power of the state, efficiency cannot be the only priority. Thus, regulatory agencies must carry out their work in ways that reflect respect for procedural fairness, distributional equity, political accountability, and checks and balances on the exercise of power. Likewise, government must operate with special attention to disciplines on corruption and self-dealing as well as lobbying and special interest manipulation of outcomes, all of which have been catalogued elsewhere and therefore will not be reviewed in depth here (Breyer et al. 2011; Coglianese 2012; Mashaw 1997; Posner and Sunstein 2015; Schuck 2014). Suffice it to say that the elements of administrative law that produce good governance—notice and comment processes, open hearing and public participation mechanisms, obligations to publish draft decisions and explain policy choices, and structures for appeal or the cross-checking of outcomes—are in some tension with efficiency goals and other aspects of the framework of regulatory excellence outlined in this article. But they are essential to governmental legitimacy and must be upheld as prerequisites in any process of regulatory transformation (Esty 2006).

Delivering Improved Regulatory Outcomes

Traditional views on public administration of the mid-twentieth century focused heavily on *efficient* delivery of government services (Bryson, Crosby, and Bloomberg 2014). In the 1990s, the broader vision of New Public Management (NPM) theorists, galvanized by Osborne and Gaebler's *Reinventing Government* (1992), began to gain sway with more of an emphasis on *effectiveness* in addition to efficiency. NPM theory revolved around two main paradigm shifts: highlighting opportunities for the public to draw lessons from the private sector and shifting toward greater accountability of results (Hood 1995). Recent years, however, have seen public administration theorists and practitioners move beyond the NPM vision and advance a more robust philosophy on government excellence that accounts for increasing institutional and policy complexity (Dunleavy 2006). These scholars have begun to emphasize new approaches to public administration that highlight the special role of government in promoting democratic decision making and public values (Bryson, Crosby, and Bloomberg 2014; Van der Wal, Nabatchi, and de Graaf 2015; Williams and Shearer 2011). Building on this emerging public administration theory, established best practices in private sector management, and my own recent government experience, I identify five areas of focus that might contribute to a new paradigm of regulatory agency excellence.

Some of the worst environmental regulatory failures of the twentieth century arose from the difficulty of capturing and managing slow to emerge or disaggregated harms.

Integration

Regulators are often called on to fix market failures and to "internalize externalities" so that our economy functions efficiently and nonmonetary priorities (such as safety or environmental protection concerns) do not get overlooked. They make decisions that define the terms of competition in the marketplace and impose significant costs (sometimes amounting to billions of dollars) on those they regulate. Therefore, getting the framework of decision making right matters a great deal. Fundamentally, this means having a systematic and carefully constructed process for summing the costs and benefits of regulatory interventions. This formula turns out to be simple to say but hard to do. Indeed, clarity and transparency about the assumptions that go into frameworks of analysis and thus into the regulatory calculus turn out to be critical (Kysar 2010). Beyond misguided foundations, there are many ways that the requisite calculus can get skewed—such that trade-offs that should be made systematically and carefully end up getting ignored or hidden, with choices instead made implicitly rather than explicitly.

Regulators need, in particular, to avoid "siloed" thinking. They must be sure to encompass all of the relevant costs and benefits and consider countervailing risks and impacts (Breyer 1993; Graham and Wiener 1997). Those charged with reducing air emissions, for instance, must be sure that they do not make water pollution worse. But sadly, this seemingly obvious rule is often ignored. Indeed, to reduce vehicle emissions in the 1990s, the EPA required MTBE (methyl tertiary butyl ether) to be added to gasoline to improve octane and produce cleaner combustion—only later to discover that the additive caused severe water pollution (Graham 2010).

Regulators need to pay special attention to costs or benefits that are hard to capture because they are spread over time or space or otherwise uncertain or hard to gauge (Carrigan and Coglianese 2012; Farber 2011; Fisher 2014). Some of the worst environmental regulatory failures of the twentieth century arose from the difficulty of capturing and managing slow to emerge or disaggregated harms, such as fishing practices that depleted fish stocks across the world or the buildup of greenhouse gas emissions from millions of sources that now threaten to cause climate change (Kahneman 2011; Kunreuther, Slovic, and Olson 2014).

Regulators must be further trained to recognize trade-offs and to take seriously opportunity costs. Simply put, money spent on toxic waste cleanup is not available for investment in sewage treatment systems. More fundamentally, a dollar spent on regulatory compliance cannot be spent for business expansion; so public officials must be attentive to the efficiency of their rules and the economic burden (and competitiveness impacts) of the requirements they impose (Martin 2007).

When Governor Dannel Malloy offered me the position of commissioner of Connecticut's Department of Environmental Protection (soon to be reconfigured as the Department of Energy and Environmental Protection), he told me that I was taking on the most "challenged" agency in the state government. The heart of the problem centered on the delay in getting permits issued and the sense on the part of the regulated community that the department did not take seriously cost–benefit trade-offs and the administrative burden imposed on business. The mistrust that these problems engendered colored everything the Connecticut DEEP did. In response, I told agency staff that we needed to think of ourselves as "DEEEP"—with three E's indicating that we were committed to progress on *e*nergy, *e*nvironment, and the *e*conomy simultaneously. This integrated agenda helped reframe how DEEP employees understood their jobs, making it clear that public (and political) support for the agency's ongoing work depended on DEEP being seen as attentive to regulatory costs and the state's economic growth imperative.

But, as with so many other aspects of public administration, the gulf between articulating a principle and making it the prevailing practice can be wide. As Kotter (2012, 55) observes, "No strategic initiative, big or small, is complete until it has been incorporated into day-to-day activities. A new direction or method must sink into the very culture of the enterprise." So creating an agency culture of concern for the context of regulatory choices and sensitivity to the balance of costs and benefits became fundamental to my transformation agenda.

While the concept of "regulatory budgets," which limit the total regulatory compliance costs that a government can impose, has not taken off (and, as often proposed, would not be a good idea), the willingness to pay for regulatory programs is not endless in the business world or in the political domain (Malyshev 2010; Wallach 2014). As noted earlier, a smart regulator will not push the limits of the public's tolerance and will ensure that efficiency is a watchword with regard to both the cost of administration (the government's regulatory expenditures and staffing, which translate into a tax burden) and the regulated community's compliance costs (Barber, Moffit, and Kihn 2011).

Signals from public officials about their seriousness of purpose when it comes to reducing the regulatory burden and cutting red tape enhance a regulatory agency's credibility and help secure the "public license to operate" that governmental bodies need to do their work—akin to the "social license to operate" that companies must protect (Kramer and Porter 2006). The across-the-board lean review of DEEP regulations that I led translated into faster processing times, reduced paperwork, and lower compliance costs, all of which produced significant goodwill in the Connecticut business community—and dramatically reduced criticism of the remaining regulatory requirements.

I also worked with the DEEP management team to identify outdated, outmoded, duplicative, and otherwise unneeded regulations and statutes, which we then convinced the Connecticut General Assembly to repeal (Klee 2014; CT DEEP 2014). These "streamlining initiatives" paid further dividends. Business leaders were shocked. They claimed never to have seen a regulator repeal rules and requirements wholesale. The value of convincing the business community that DEEP cared about the regulatory burden it was imposing and was seeking to minimize it meant that when the agency did impose a burden, it got the benefit of the doubt that the costs were justified (Mazzucato 2013).

At the same time, guided by a focus on the biggest risks the department regulated, I launched an effort to ramp up the vigor of implementation of the state's core environmental rules. This initiative won support from the environmental community *and* from business leaders who wanted to be sure that companies that invested in compliance would not be disadvantaged in competition with others who might cut pollution control corners.

Innovation

Inertia makes change difficult to deliver in every organization, but especially in government, where there is often little incentive to deviate from prevailing practices and risk taking may not be rewarded. This is not to say that government leaders have entirely missed the logic of innovation. As Borins (2014) points out, there have been policy innovators in government agencies of all types who have advanced fresh approaches to government practice. To cite just one of example, the city of Denver's Greenprint Environmental Management System supported efforts by all 28 of Denver's municipal government departments to be certified under ISO 14001, sharpening the focus across city government on the environmental aspects of the work in each department (Borins 2014).

Regulatory excellence requires that systems be regularly reviewed and updated—and sometimes completely overhauled (Fisher 2014). When new policy-making tools emerge, the regulatory process needs to be reengineered to take advantage of the advances that have become available. Innovations that are quickly implemented in the business world often move slowly into the governmental realm. For instance, the information technology revolution that has transformed many aspects of society—how baseball teams pick their players, how businesses advertise or market their products, and so forth—has been very slow to take root in the policy domain (Esty 2004; Esty and Rushing 2007; Nussle and Orszag 2014).

In this spirit, I put innovation and changed modes of operation at the heart of my vision for the Connecticut DEEP. I understood clearly that transformation was not only essential in light of perceived limits to the agency's past performance but also an inescapable reality given the governor's commitment to shrink the size of state government, which meant that I had to plan for staff attrition over three years of about 10 percent and an overall budget shrinkage of 15 percent. But thoughtful budget cutting turns out to be another critical element of regulatory excellence—and a crisis that can be converted into an opportunity. Specifically, budget cuts offer a way into the difficult conversation about priorities and which programs have outlived their usefulness as well as the need for transformed regulatory practices.

Could Connecticut afford to spend 30 person-hours on each underground oil tank inspection? Not under the budget realities laid out by Governor Malloy. But it would have been hard to get the DEEP oil tank inspection team to shift to new ways of doing business (field inspectors using tablet computers and electronically transferring their reports to all those in headquarters who needed to review them for simultaneous action) without the pressure of budget cuts and shrinking personnel counts (Kelman 2005; Kotter 2008). Today, those same inspections each take about 4 person-hours to complete (Saliby 2014).

The Connecticut DEEP's lean initiative required the staff who managed each process to lead the redesign charge, which some found burdensome but ultimately resulted in significant buy-in from those who were being asked to remake their own work lives. The results were dramatic. Permitting time dropped by an average of about 75 percent. The backlog of permits was reduced by 97 percent. And the Connecticut Business and Industry Association's annual survey of agency performance revealed a strong uptick in the business community's assessment of the agency's performance. Of particular note, these efficiency gains were achieved while maintaining and, in some cases, elevating environmental standards (Barber 2015; McCleary 2012).

Regulatory excellence in the twenty-first century requires a real commitment to using information technology tools and to delivering on the promise of "e-government" (Osborne and Hutchinson 2004; White House 2015). Where regulatory decisions once required a "paper file" to be reviewed by five different people within an agency, today, an electronic file can be parallel processed by all five, cutting the time required for review by up to 80 percent.

Likewise, using the "TurboTax" model, government agencies can create "smart forms" that help those applying for permits get their applications filled out right the first time. The opportunity to bring best practices from the business world and from emerging academic theory (notably, behavioral economics ideas such as "nudges," choice architecture, and default rules) has just begun to be tapped (Sunstein 2013; Thaler and Sunstein 2008; Thaler, Sunstein, and Balz 2010; Weaver 2015). Why not, for example, offer small businesses a series of fully drafted permit applications with a few boxes to fill out to tailor the form to their specific circumstances? And rather than sending inspectors out on the road, could not compliance with a permit for rebuilding a dock be checked on Google Earth? The opportunities for new and better ways of making regulatory compliance cheaper, easier, and faster in the information age are nearly endless. But this potential will only be realized if agencies promote a spirit of innovation.

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Similarly, access to public information can be completely restructured in our digital era (Royo, Yetano, and Acerete 2013). Rather than keeping paper files and responding to Freedom of Information Act requests, it makes more sense to put all of the material that is in the public realm online immediately so that people can find the files they want at any time without coming to the agency offices or getting help from agency staff. This sort of innovation offers the promise of lower document management costs, less space allocated to files, and reduced staff time. Indeed, my effort to make DEEP "paperless" was met with great enthusiasm—particularly my proposal that the basement file space be converted into a coffee bar.

More generally, public participation processes should be reconfigured for the twenty-first century. Where 60 or 90 days of review might have been needed in the past for interested parties to file comments by mail, today's instant communications options mean that 30 days should be the norm for notice and comment procedures, with extended time granted only for particularly complicated issues. But as time frames are pared back, the options for public participation in the regulatory process should be expanded. Public hearings should be webcast—with time reserved for those who might want to Skype into the conversation. Comments should be taken not just by e-mail but on various other social media platforms as well. And why not get regulatory bodies to do live chat sessions at particular times to allow concerned citizens to get faster and more focused responses to questions that are on their minds?

Some consumer groups and environmental organizations may claim that compressed review time frames or reduced emphasis on formal public hearings will limit regulatory oversight. But their objections cannot be squared with changing norms about how people connect not only with each other but also with government. Moreover, many past regulatory processes moved far too slowly and excluded those who could not take the time to come to hearings, so it is hard to claim that prevailing notice and comment practices have been optimized for full public participation.

In addition, past drawn-out review processes added cost and administrative burden that cannot be justified, especially as companies face growing global competition from enterprises operating abroad under much lighter regulatory requirements. To put a finer point on this competitiveness concern, the regulatory burden on business has been of little interest to many nongovernmental organizations that fashion themselves as watchdogs for the public interest. Their defense of robust regulation is quite right. But vigorous regulation need not be burdensome or slow. Insensitivity to regulatory inefficiency and costs has translated into competitive disadvantage for U.S. companies in many markets and helped fuel the present political backlash against regulations broadly. I believe the environmental community should therefore join regulatory reform efforts that aim to "lighten" the regulatory burden without lowering standards as a way to ensure ongoing public and political support for environmental protection and other regulatory goals.

Simply put, it is much easier to sustain a commitment to robust regulation under conditions of economic vitality and job growth than in circumstances of recession and job insecurity. This reality suggests that consumer advocates, environmentalists, and regulators should all take an interest in the economic success of their jurisdictions, which argues for bringing digital-age speed and information technology tools to bear in redesigned regulatory programs.

Some innovation efforts must be led from the top. But many innovation opportunities will be missed if there is not a parallel commitment to bottom-up efforts to find breakthroughs. Regulatory excellence thus requires that a regulatory agency's leadership team encourage fresh thinking and risk taking at all levels so as to ensure that new approaches will be put forward, experimentation undertaken, and better ways of doing business identified (Barber 2015). Innovation does not come easily (Chicago Booth School of Business 2014); innovation within public administrations is even more difficult, given that most government workers have routinely not been rewarded for creativity. It must be reinforced constantly by ensuring that breakthroughs are publicly celebrated (Power 2011). And the emerging literature on the range of motivations in the public sector for innovation needs to be tapped more widely in practice (Perry and Vandenabeele 2015).

At the Connecticut DEEP, I pushed the management team to challenge the prevailing wisdom every day—and to take risks. I urged the middle managers in particular to offer up their ideas on how things might be done differently, and I promised to run interference for them with their bosses or the EPA supervisors beyond the agency. From this commitment to honor innovation came dozens of new initiatives, including, for example, a restructured approach to removing asbestos from schools—*without* a threat of penalties for Clean Air Act violations and *with* a funding mechanism to support energy efficiency improvements for the schools. This shift of emphasis to regulatory compliance rather than "gotcha" enforcement, along with cost savings for schools through lower energy bills, made principals and superintendents (and thus local officials as well as state representatives and state senators) big fans of the transformed approach to asbestos abatement.

Incentives

At the heart of regulatory excellence lies a need for careful attention to incentives (Khanna and Anton 2002)—the signals that change behavior in the regulated community but also the structure of rewards and penalties that face those in government. Evidence is mounting that when companies see alignment between their business strategies and the government's regulatory agenda, much more gets done than when these interests are pulling in opposite directions (Barber 2015; Esty and Winston 2006). In the environmental arena, for example, command and control regulations tend to lock in a few selected "best available technologies" for pollution control and dull incentives for further gains. Market-based regulatory strategies, in contrast, can be designed to spur ongoing innovation. But the shift toward economic-incentive-based approaches is happening more slowly than it should.

Government leaders need to make *incentive analysis* a top priority so that their staffs understand how the regulatory framework shapes behavior in the marketplace. Harnessing economic incentives and competitiveness pressures offers the prospect for improved outcomes in many circumstances (Fisher 2014). In addition to designing regulatory requirements to reward innovation and encourage business community problem solving, regulators need to pay special attention to unintended consequences and secondary effects (Schuck 2014).

In too many cases, the failure to think about the real-world impacts of regulatory requirements has caused enormous problems. The federal Superfund program in the United States, for example, which was launched in 1980 with a hope that it would induce greater care in the disposal of hazardous waste, has trapped thousands of properties in regulatory limbo and meant that redevelopment of brownfields has become very difficult (Ferrey 1994). In Connecticut, we recognized the uncertainty created by the Superfund liability rules and parallel state requirements, which together made it difficult for potential developers of older industrial sites to get financing. With the help of a Brownfields Task Force and leadership from key legislators, the Connecticut DEEP advanced legislation that clarified the liability rules. These modest legal refinements shifted the incentives in place: reducing the uncertainty about potential liability for past harms, inducing private developers to invest, and making it easier to finance brownfields projects.

Investment

Where the money will come from to fulfill public policy goals now requires much greater focus than it might have in the past, when governments at all levels had bigger budgets. Increasingly, to get brownfields cleaned up, clean energy projects built, or funds flowing in support of any number of other critical projects, the regulatory structure must be carefully crafted so that limited government resources can be used to leverage private sector capital investment.

Much of the regulatory framework of the twentieth century ignored the question of where money to fulfill regulatory goals would come from. In the environmental arena, for example, the legal structure long centered on "red lights"—rules that spelled out what polluters were told to *stop* doing. Today, it is clear that we need an equally well-developed structure of "green lights" that give a *go* signal to the business world. Engaging the entrepreneurial spirit of the private sector in solving problems—whether developing renewable energy technologies or making investments in new infrastructure such as water systems—turns out to be an essential ingredient of progress for many governmental agendas (Barber 2015; Winston 2006).

In the spirit of inducing private capital into needed clean energy projects, the Connecticut DEEP shifted from the prevailing twentieth-century *subsidy* model for promoting renewable power and energy efficiency to a new approach centered on clean energy *finance.* Rather than trying to pick winners and fund their projects, Connecticut launched a "Green Bank" with the express mission of using limited public funds to leverage private investment in clean energy projects—with a new focus on "cheaper, cleaner, and more reliable" energy. By "de-risking" clean energy investment in Connecticut, encouraging entrepreneurial activity, and harnessing the discipline of private capital and market forces, DEEP was able to deliver a 10-fold increase in renewable power projects in the state and vastly increased support for energy efficiency while lowering project costs (CT DEEP 2015).

The new approach demonstrates several additional elements of regulatory excellence. First, rather than seeking new money, existing funds were redeployed. Second, market forces were harnessed to produce better results. The key to the expanded renewable energy investment (covering solar, wind, and fuel cells) centered on reverse auctions and marketplace competition across technologies as well as specific policy incentives to drive down costs (Schuck 2014). Third, the state recognized that creating more certainty in the marketplace was a critical government role as clarity and predictability help to reassure private investors and reduce their perceptions of the risks of putting up capital for clean energy projects. DEEP launched a number of efforts in this regard, notably providing the winners of the reverse auctions with 10- and 15-year power purchase agreements that they could literally "take to the bank" and get low-cost financing. In addition, the Green Bank helped standardize clean energy contracts, launched a Property-Assessed Clean Energy program that provided for repayment of commercial energy loans on local property taxes, led an initiative with cities and towns to lower the "soft costs" of oversight and regulation, and took a tranche of default risk from the private banks putting up funds—all of which reduced the perceived risk of investment in clean energy in Connecticut, which translated into a lower cost of capital and a dramatic increase in the flow of private finance for new projects (Connecticut Green Bank 2014).

Implementation

As noted earlier, regulatory success must be judged not by good intentions or money spent but rather by on-the-ground results achieved. Efficacy matters. So does efficiency. And so does public engagement. It turns out to be important to remind all those working on regulatory matters that getting good outcomes (which protect the public) should be a priority, but so should speed (Schuck 2014). Clarity about what should be done is also important. In fact, getting an answer of no from a regulatory agency quickly is often better (as it allows a filing to be redone in a manner that will work) than a drawn-out review.

In delivering regulatory programs, moreover, the public must understand why particular standards are being imposed and come to believe that the rules make sense and that enforcement is being done in a predictable, efficient, and neutral manner. All of this requires a focus on transparency and on metrics that make vivid the requirements, standards, and expectations.

We now live in a world that is data driven and fact based. Directionally correct regulation is not good enough. Government mandates must be narrowly tailored to statutory goals and implemented in a cost-effective manner. Demonstrating these elements of regulatory excellence requires carefully designed metrics. In the past, too many performance measurement systems tracked activity or inputs rather than results. When I was at the EPA in the 1990s, for example, we tracked "enforcement" progress by counting the number of cases brought—which led to a spike at the end of each quarter in asbestos violation notices going out, representing the easiest sort of case to bring but not necessarily the highest risk behavior to redirect (Metzenbaum 2013). Instead, metrics need to be designed to gauge outcomes and effectiveness. The best environmental metrics tell us whether the air and water are cleaner—normalized for confounding factors such as variations in temperature (air) or rainfall (water). Likewise, tracking the speed with which permit reviews get completed is a good way to assess whether operational efficiency is being given sufficient priority.

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More generally, metrics should be aligned with the regulatory agency's vision and goals and designed to focus attention on the most critical priorities (Barber 2015; Rodgers and Hunter 1992). As noted earlier, care must be taken in performance measurement design otherwise incentives will be created to "teach to the test," which torques effort away from strategic goals that require sustained effort to those with short-term payoffs. In addition to proper framing, any system of performance measurement must be undergirded by statistical best practices. For example, metrics need to be normalized to ensure that unlike circumstances are not being compared. And sensitivity analysis should be deployed to highlight which assumptions or factors determine outcomes.

Good implementation requires more than robust metrics. Regulators must be committed to a program of continuous improvement in their work. In this regard, it is critical that everyone in the regulatory body be focused on productivity gains. Performance needs to be benchmarked both internally and externally, and lagging performers need to be coached on how to improve (Osborne and Hutchinson 2004). Best practices need to be systematically identified both from within the agency and from others doing similar work in other regulatory organizations.

Conclusion

As this article suggests, we can now identify a number of regulatory transformation best practices, starting with clarity about the organization's mission and a commitment to execution. In many agencies, the vision and direction will need to center on adapting to changed circumstances and thus to innovation in the regulatory process—and the critical job of making the organization more effective and efficient while maintaining public values. In terms of execution, appreciation for the inevitable trade-offs that regulation entails and more broadly attention to "customer" expectations need to be top priorities. In addition, best-in-class regulatory bodies focus on the incentives their rules create, recognize the importance of transparency and predictability in their actions (which build trust with stakeholders), emphasize data and metrics to track performance, and commit to benchmarking and continuous improvement.

Bringing a degree of analytic rigor to the quest for regulatory excellence offers the promise of much better results in a variety of settings. A body of theory about what is required for improved regulatory performance has begun to emerge. Now the practice needs to follow with a further commitment to track progress and create an empirical foundation for additional refinements to the theory.

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