

**Key Lessons from the  
35<sup>th</sup> PURC/World Bank International Training Program on  
Utility Regulation and Strategy  
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Teachers learn from their students, and students learn from each other. As in the past, the 75 participants from 31 nations in this training course identified the key lessons learned over the two-week period. During the concluding session of the program, they shared their reactions to formal presentations and informal networking. The PURC team appreciated the dedication and energy exhibited by participants: attendees brought insight and understanding to the sessions and shared their ideas with all of us.

Note that while most of the key lessons refer to regulatory agencies and to those developing infrastructure reforms, the principles apply to operators as well. Organizations face the same challenges: creating a sustainable infrastructure system where all stakeholders have confidence in the integrity of the process and have a shared vision of improved infrastructure performance.

As PURC's Director, Mark Jamison, observed: "Many of the lessons tend to be strategic rather than technical in nature – suggesting that many of the important ideas involve how regulators, representatives from government ministries, infrastructure managers, and consumer advocates need to 'get on the balcony'." Intentionally stepping back from the "give and take" of regulation allows leaders to see how various stakeholders limit or promote reform. We hope that the annotated list of lessons stimulates further discussion among those involved in these important sectors. Some of the elaborations on the points identified by participants are drawn from Key Lessons from previous course deliveries. I take full responsibility for errors of interpretation in this summary of *Key Lessons*.

*Sandy*

1. ***Uniform Systems of Accounts (in combination with standardized operating statistics) provide the framework for the systematic analysis of utility performance.*** There is no need to re-invent the wheel: standardized systems abound. Networking with colleagues from around the world provides participants with insights about how to implement "best practice" in their home countries. No nation has "all" the answers, but the process of sharing ideas and experiences leads to ways to promote professionalism, improve regulatory processes, and develop better decisions. Similarly, regional regulatory associations act as clearinghouses for studies and reports. They promote capacity building through conferences and technical workshops. Regional working groups for operators serve a similar function, facilitating the exchange of ideas across national boundaries. Learning from counterparts around the world represents one way to strengthen organizational performance.

2. **Benchmarking infrastructure utilities is an important tool regulators have for promoting efficiency (via incentives based on feasible targets) and for making price comparisons across regions and countries.** Without benchmarking, cost of service regulation would only enshrine high costs in high prices. Price caps that reduce prices for inefficient firms can provoke investors to pressure management to improve performance. For state-owned utilities, low prices also punish customers who will now receive poor service and punish unserved citizens, since less funding is available for network expansion. In addition, identifying high performance infrastructure operators singles them out as ones who will not waste donor funds. Identifying utilities with weak performance provides citizens with a basis for pressuring owners of privately owned utilities and local politicians to replace poor managers of state-owned enterprises.
3. **Set Clear Goals and Prioritize Objectives for the sector.** There are many potential policy objectives, but not all can be given equal weight. The weights depend on current levels of performance, the particular sector, and citizen attitudes. All those affected by infrastructure should be clear about their objectives and the processes used to meet those goals. Regulators need to work with stakeholders to educate those affected by price, quality, and network coverage. Since infrastructure is so important for economic growth and social cohesion, public policy generally attempts to promote network expansion. The sector requires significant capital investments, so decision-makers need to prioritize their objectives and carefully define the problems they face. Companies, ministries, and regulators all shape the way issues are defined and addressed in the regulatory process.
4. **Do not use a strait-jacket when addressing infrastructure problems.** Maps might provide travelers with information about ways to reach a particular destination, but the actual route will depend on topography, traffic congestion in current routes, and weather. Similarly, regulators and managers will have a number of alternative ways to address infrastructure issues. Best practice regulatory institutions need to take a more active role in educating the public and in communicating sector developments to all stakeholders. It is said that “the fewer the facts, the stronger the opinion.” One way to reduce the divisive role of rhetoric is to introduce information about the costs and benefits of different policy options. If the regulatory process is transparent, stakeholders (including political leaders) will understand the decisions of infrastructure sector agencies.
5. **Develop efficient and effective tariff structures to promote cost-effective consumption by customers and financial sustainability for the utility.** No single skill set is adequate for addressing pricing issues. Engineers, lawyers, economists, accountants, and specialists from other disciplines can be brought together to tackle complex issues. The sharing of knowledge represents an important activity within and between organizations. Formal training (like courses offered at PURC) represents one setting for sharing ideas and experiences. Each organization needs a system that helps professionals be more intentional about seeking and sharing knowledge.

- 6. Work with stakeholders to develop incentives that promote improved sector performance.** Regulators must recognize the existence of information asymmetries: managers know far more about the ease or difficulty of containing costs and improving performance. Nevertheless, international case studies can help people see how questions are addressed in different settings. As Ralph Waldo Emerson said, “People only see what they are prepared to see.” Past experiences place blinders on us. Researchers call this confirmatory bias. We tend to discount or misinterpret facts that are inconsistent with our own world view. Cases from other nations remind us that we all wear blinders and need to interact with others to better understand our own situation. A wise person once said: “Don’t believe everything you believe.”
- 7. Despite diverse circumstances and different cultures, regulators share much in common around the world.** The dialogue should continue. There is no single approach to regulation that works everywhere. “One size does *not* fit all.” The enabling legislation, judicial system, national income, and investment climate all affect the opportunities facing operators. However, the same regulatory principles apply in most circumstances. For example, holding managers accountable for weak performance is only possible if data on trends and best practice are widely available for analysis. Speakers in the training program have underscored the importance of data collection, verification, and analysis. Without sound regulation, long-term investments will not be made: decision-makers are likely to conclude that there are no payoffs to those taking on the risks and responsibilities for new programs.
- 8. Stability of the regulatory system results from stakeholder acceptance of regulatory activities.** This requires transparency and consistency in decision-making, in addition to participation by stakeholders in the process. Regulatory systems should promote credibility (with investors and government sources of financial support), legitimacy (so consumers feel protected from monopoly prices and from poor service), transparency (so participants know the rationale for decisions), and efficiency in the delivery of service (so valuable resources are not wasted through mismanagement or political interference).
- 9. Communication is central to successful regulation.** For example, carefully dealing with the press is important, especially in a crisis situation. Regulatory systems need to be understood by citizens. Public education becomes one task for the agency. Technical jargon gets in the way of public understanding. While the news media may highlight what is sensational, reporters and editors are aware of the crucial role of infrastructure in society’s well-being. Without good press relations, media coverage will be biased; citizens and politicians will not support needed reforms. Daniel Carpenter in *The Forging of Bureaucratic Autonomy* (2001, Princeton University Press) stated:

Bureaucratic autonomy . . . emerges not from fiat but from legitimacy. It occurs when political authorities see it in their interest to defer to agency action, or when they find it too problematic to restrict it. They defer to the agency because (1) failure to do so would forfeit the publicly recognized benefits of agency capacity,

and/or (2) the agency can build coalitions around its innovations that make it costly for politicians to resist them. These coalitions are part of the agency's reputation; reputations are not ethereal but are embedded in network-based coalitions.

Without public understanding of infrastructure issues, regulators will have difficulty establishing favorable reputations.

**10. Public/private partnerships can be an effective way to obtain capital and expertise for infrastructure investments and operations.** However, when price is initially far below cost, citizens will perceive private participation as the reason prices go up. The resulting citizen unrest reflects several failures. First, the concessionaires may have unrealistic expectations regarding cash flows. Second, the government tends to do a poor job of educating citizens regarding the implications of the status quo. Prices that are below cost and national budget constraints would have led to slow growth in coverage and continued low-quality service. Furthermore, political promises often establish unrealistic citizen expectations: the result is disappointment for all stakeholders, including elected officials. Regulators can contribute to universal access by promoting more efficient arrangements for infrastructure service delivery and by grounding citizen expectations in reality. For more information, see a series of Frequently Asked Questions on PPPs available at [www.regulationbodyofknowledge.org](http://www.regulationbodyofknowledge.org) (BoKIR).

**11. Unbundling has strengths and limitations.** When restructuring a vertically integrated sector, monopoly components can be separated from competitive activities. Such vertical dis-integration can involve a loss of economies associated with system planning. However, with separate charges for each component (unbundling), stages of production that are potentially competitive can attract entry—potentially leading to improved industry performance. “With unbundling, the regulator may allow the provider of the non-competitive component to provide a single service that combines the competitive and non-competitive portions of the service, but the regulator would also require the operator to provide rivals with equal access to the essential facilities under the same terms and conditions as the operator does its own competitive service. This is a common approach in telecommunications.” [from BoKIR]

**12. The media filters information for the wider public, so making it an ally is a good strategy.** The press represents one vehicle for communicating with those groups interested in infrastructure performance. Issues need to be aired outside and within organizations. Communication is an essential part of transparency. Note, the question is not “Should there be regulation?” Rather, policy-makers should ask, “What are the limits to regulation as an institution for addressing infrastructure issues? What are the alternative arrangements?” There is solid empirical evidence that a good regulatory system improves sector performance. This point needs to be communicated to different external stakeholders.

- 13. *Good Communication with stakeholders involves both delivering a message (educating the public) and listening to those affected by regulatory decisions (becoming educated by affected parties).*** Good communication is as important as good technical decisions. The resolution of infrastructure problems requires many disciplines, including law and engineering. However, technical jargon can get in the way of good communication, especially when conveying information to the public. For example, economics reminds us about the opportunity costs of making particular decisions, where these costs reflect the legal, financial, and technological constraints facing decision-makers. When writing a press release, instead of using technical terminology, like opportunity costs, the press release should focus on “costs.” “Soft skills” like creativity and communication are tools needed by regulators and operators.
- 14. *Negotiation is another skill that is part of a regulator’s and operator’s tool-kit.*** Technical skills are necessary but not sufficient for strong sector performance. Agencies and operators need professionals with leadership skills, experience in negotiation, and proficiency in communication. Regulators often serve as mediators when complex issues arise. Robert Thomas noted that “soft” does not mean “easy” or “unimportant.” Negotiation and mediation skills are valuable in the regulatory process. That means being able to assess the situation, knowing your own wants and needs (BATNA—best alternative to a negotiated agreement), identifying the interests of stakeholders (substantive, process, relationship, and principles), and setting strong goals.
- 15. *Nations face similar problems in the area of infrastructure.*** This pattern arises because network industries share common problems. Sector regulators can benefit from lessons learned in other sectors. Regulatory networking yields lessons related to constructing sustainable public-private partnerships, dealing with emerging technologies, addressing the needs of stakeholders, or applying methodologies to analyzing costs or the impacts of subsidies. Both multi-sector and single-sector agencies face challenges. The former can utilize professionals across several sectors and may be able to better balance the influence of politically powerful sector interests. The latter are likely to have specialized staff who can tackle sector-specific issues. Both types of agencies will still have to collaborate with other governmental agencies (addressing environmental discharges, spectrum allocation, and water resource allocation, for example).
- 16. *Diverse personality types are essential for addressing emerging challenges.*** For example, “trouble-makers” can contribute to the solution of complicated infrastructure issues. Within any organization, one can identify people who are highly intelligent who raise issues that others have to address. Such individuals have an important role to the extent that they help the organization focus on real issues, as opposed to maintaining a (often unproductive) “business as usual” approach to decisions.

- 17. Maintain both *organizational discipline and agency autonomy* to be effective.** Regulation is not divorced from politics, but it should not be married to politics either. One lesson emphasized in PURC training courses is that “regulators need to think politically without being political.” Given the social importance of access to infrastructure, those involved in making the regulatory system work cannot ignore politics. “Independent” regulatory agencies are not fully autonomous: they are accountable to legislative, executive, and judicial authorities. They must fulfill the requirements of the law or the decree that established the agency, and decisions are subject to judicial appeals—ensuring that the agency follows due process. Being accountable to other institutions does not mean that regulatory agencies must support a particular political party: ideally, agencies should be insulated from day-to-day political meddling (including patronage requests). Nevertheless, regulatory leaders cannot ignore the political climate in a nation.
- 18. *Credibility of regulatory agencies depends on predictability and stable rules that take local conditions into account.*** Behavior that is appropriate in one nation may be perceived as unethical in another. Standards for open meetings, negotiations, and hiring are not universal. Nevertheless, as Ken Kernaghan and John Langford note in their book, *The Responsible Public Servant*, potential conflicts of interest arise with self-dealing, accepting benefits, influence peddling, using employer information or property for private advantage, using confidential (proprietary) information, outside employment, and post-employment activities.
- 19. *Leadership should not be underestimated as a factor affecting infrastructure performance.*** Unless deposits are made into emotional bank accounts, supporting staff and teams cease to operate with enthusiasm. Professionals with training in any specialty need to be able to participate in teams. That means professionals in agencies and operators cannot work in silos. The organizational structures must encourage cross-training and respect for related fields. When dealing with complex infrastructure issues, we all could benefit from a little humility. Technical skills are necessary but not sufficient for regulatory effectiveness. Agencies that operate in silos lose the synergies that could be drawn upon through interdisciplinary task forces. Leaders in the agency must also cultivate leadership skills that enable them to deal with all stakeholders. The development of professional staff members requires opportunities for updating their skills. In addition, leaders should seek ways to become less isolated. Mechanisms for listening to one another should be identified and utilized. Bureaucracies can become comfortable: leaders can become insulated from the real issues.
- 20. *The regulatory framework goes beyond just the sector regulator.*** Regulation can improve sector performance if pitfalls are avoided. However, the regulatory agency is only part of the “regulatory system” which includes the laws, stakeholder attitudes, appeal procedures, citizen expectations, and political stability or instability. The job of the regulator can be viewed as balancing the interests of consumers, operators, and government. Stakeholders have legitimate concerns: some citizens may not be receiving

service, the financial sustainability of operators may be problematic, and elected political leaders have concerns regarding regional development or may seek low prices for current customers. It has been said that “the role of the regulator is to disappoint all stakeholders equally.”

- 21. An evidence-based system is more likely to be stable and predictable.** Predictability and transparency are two elements lacking in many regulatory jurisdictions. An agency needs to be consistent in both its process and in the substance of its decisions. Transparency implies clear rules and functions that give operators confidence in the professionalism of those providing oversight. The public is seldom fully aware of current infrastructure policies and rules. Of course, sound decisions require excellent support staff. To recruit talented professionals requires salaries commensurate with the job requirements. Retaining outstanding staff requires that professionals feel valued and are actually rewarded for their job performance. An annual Award for Excellence represents one way to recognize outstanding contributions to the agency’s mission.
- 22. Both price caps and cost of service regulation establish incentives for decision-makers.** All the parties to a decision should understand the implications for high and low performance. All such plans create incentives affecting cost containment, service quality, and network expansion. ROR (also called cost of service regulation) is a regulatory method that provides the utility with the opportunity to recover prudently incurred costs, including a fair return on investment. This mechanism limits the profit (and loss) a company can earn on its investment. Regulatory lag and special incentive plans are often used to offset the disincentive to minimize costs under this mechanism. A price cap formula is a precise expression denoting the constraint facing a firm over the period of a price control. An example of a simple version of the formula would be  $RPI-X+K+Q$ , where the terms reflect adjustments for retail price inflation, productivity, network expansion, and improved quality of service. In practice, the formal representation of the formula can be quite complicated, especially when there are different constraints on particular baskets of commodities. All the plans start with initial prices based on a formula for determining “revenue requirements.” The different methodologies then diverge, depending on how often the prices are revisited and how the prices are set for succeeding periods. [Portions extracted from the Glossary for the Body of Knowledge on Infrastructure Regulation.]
- 23. Know how to frame questions: queries should be strategic and specific.** Cultivate opportunities for engaging the public in discussions. Issues should be framed in a way that links regulatory rules to expected performance improvements. In addition, citizen input represents an important source of information and a forum for educating key groups. Hearings provide one format for obtaining opinions—though the weight given to some concerns will depend on the financial sustainability of current prices. Note that autonomy is earned over time, not “granted.” The creation of a regulatory system results in some groups losing the authority they had previously exercised. By demonstrating

professionalism and impartiality, the new “player” can earn legitimacy. Full independence is impossible since agencies must be accountable to stakeholders.

**24. *Continued capacity-building requires strong practical, theoretical, and quantitative backgrounds.*** Capacity building is essential if support staffs are to have technical skills and motivation to develop evidence-based recommendations. The most dangerous “knowledge” is a principle or idea that is actually false. When we think we understand something, but actually do not, then we are likely to push forward without a solid grounding in reality. All of us are susceptible to excessive confidence in our own understanding of the way things work. That is one reason why open discussions and thoughtful debate are necessary within any organization. When conflicting ideas are not openly discussed, decisions are likely to be based on inaccurate information and/or inappropriate methodologies. Multiple disciplines (including engineering, economics, finance, accounting, and management) are necessary to bring a wide range of perspectives on individual issues.

**25. *There needs to be a clear demarcation for the regulator, operator, and policy-maker.*** The regulator implements public policy by setting rules and incentives for the operator. When these roles and responsibilities are combined in a single organization, there is likely to be less professionalism in operational decision-making and rule-setting. In addition, private investors will be concerned that regulatory decisions will be politicized.

**26. *Regulators and managers can learn from their counterparts in other countries and from each other.*** It is easy to think that we have made great progress, when we are unaware of what regulators or managers in other countries are doing. Sometimes we think that we have fully addressed an issue, and then we learn from others that some very creative approaches are being implemented elsewhere. Agencies and operators must be in a continuous state of learning. Maintaining consistency with past decisions and yet having the flexibility to deal with new situations (or crises) require carefully balancing predictability with adaptability: all the while, learning from our mistakes and from the mistakes of others.

**27. *Market reform requires a comprehensive understanding of the required components as well as a strategic program for transforming the sector.*** Decisions always are made in a particular context, where the political, economic, and social environment sets the stage for moving forward. Sometimes, goals or targets are not feasible if political constraints on price are rigid. It is better to be clear about what is possible. Targets should be set based on reality, not rhetoric. Otherwise, stakeholders become anchored to positions that are totally infeasible or inconsistent with reality. Leaders must think, plan, and act strategically. That means taking into account the reactions of all stakeholders and continually strengthening the internal skills of their agencies. Infrastructure concepts and regulatory strategies have to “fit” the local situation. Concepts and principles can apply

across nations, but the unique national settings (traditions, legal mandates, and public perceptions) require tailoring principles of autonomy, participation, and transparency to the national context.

**28. Regulators cannot establish rules for activities they do not understand.** Clearly, micro-management is inappropriate, but an awareness of production processes is essential if incentives are to be effective. In particular, decision-makers need to track innovations that affect the industry. Market reform is not an end in itself but a means to improve sector performance. For example, in some countries, reforming the wholesale market is a key to promoting efficiency, both in terms of operations and new investments. Regulators should be viewed as implementing policy since developing and articulating policy is the responsibility of the key political leaders in the executive branch and the legislature. However, regulators often have expertise lacking in other branches of government. Thus, regulatory reports and public meetings provide platforms for identifying issues and the implications of alternative approaches to resolving those issues. Similarly, operators can take initiative in reforming internal processes and external rules affecting their performance.

**29. Engage all stakeholders so rules are transparent and stable.** Regulators and operators need not be adversaries: they share a common objective—expansion of the network and improved operating performance. Other stakeholders, like government ministries, unserved customers, suppliers of capital (both public and private), and potential entrants, all have roles to play in determining the success of the sector. In addition, delays are not neutral with respect to impacts. Special interests favoring the status quo (over reform) are content with current poor performance. They do not want regulatory leaders who set goals, implement programs, and evaluate the impacts of decisions.

**30. Hearings and rule-making are central to regulation.** Adjudication of specific rate cases (via formal hearings or all-party-settlements) and rule-making (for addressing emerging sector issues) enable regulators to gather information and make decisions regarding both cases and problems facing policy-makers. Thus, schedules for the hearing process need to be developed, disseminated and adhered to: delays have differential impacts on different stakeholders. Note that many citizens do not understand the importance of financial sustainability for network expansion and good quality service. Terms like weighted average cost of capital (WACC), cash flows, operating expenses, and net present value are not typically discussed around the dinner table, yet these financial terms are central to sound regulation. Helping the public understand the implications of excessively low prices is a challenge, but one that needs to be addressed by regulators, public officials, and managers. Thus, “neutral” or balanced decisions will tend to focus on substantive issues, weighing the consequences of alternative rules in terms of national priorities (as reflected in legislation). A regulatory process that adheres to schedules and results in timely decisions is important. However, substance (attention to consequences) and public communication are even more important.

## Concluding Observations

Here are six elements that (in my opinion) are necessary for strong regulatory performance:

**Information**—*Information matters*: the collection and authentication of data is necessary to identify trends, understand current patterns of performance, and determine realistic targets for utilities; technical skills and on-going capacity-building can support such initiatives.

**Institutions**—*Organizations matter*: the sector regulatory commission is one component of the regulatory (and governance) system, which includes the legislature, courts, utilities, unions, and the laws that establish roles and responsibilities for these institutions; inter-institutional collaboration is essential for improved sector performance.

**Incentives**—*Incentives matter*: decision-makers behave in accordance with payoffs associated with different outcomes; every regulatory rule rewards or penalizes actions affecting utility performance.

**Ideas**—*Ideas matter*: each of us brings a conceptual framework to our decisions; new perspectives can serve as catalysts for activities that improve the operation and financial sustainability of water utilities.

**Ideals**—*Values matter*: when we are clear about our objectives and communicate those priorities to stakeholders, the resulting dialogue can clarify our goals and promote greater consensus regarding sector objectives.

**Individuals**—*People matter*: ultimately, leadership is essential for improved sector performance; no matter how dysfunctional or inefficient current arrangements are, someone is benefiting from them—which implies that overcoming institutional inertia requires strong leadership.

Policies are not self-implementing. They require leadership. Some of the leaders who will make a difference in their nation's economic and social growth participated in the PURC Training Program. Hopefully, the discussions equipped them to be more effective when they returned to their nations—to continue the *initiatives* identified during their stay at the University of Florida.

## Additional Resources

[Handbook for Evaluating Infrastructure Regulatory Systems](#) by Ashley C. Brown, Jon Stern, and Bernard Tenenbaum, The World Bank, 2006. This volume provides an overview of why, what, and how to evaluate regulatory systems. A CLASSIC!

Check out other web-links at [www.purc.ufl.edu](http://www.purc.ufl.edu) and at [www.regulationbodyofknowledge.org](http://www.regulationbodyofknowledge.org).