The main difference between closed and open systems is the complexity and density of the interactions with their environment. The choice between open and closed systems comes down to a judgment about the complexity of the world we live in and a view about the need for governments to acquire new capacities to be fit for the times.

The participants in the New Synthesis Project share the view that the Classic model of public administration inherited from the 20ᵗʰ century is insufficient to prepare governments to face the challenges of the 21ˢᵗ century. The key questions then become What does it take to solve peacefully some of the toughest and most complex problems of our time[28], and What can we do to prepare governments to face the challenges of these times?

Chapter 2

What is Different About Serving in the 21ˢᵗ Century?

The significant problems we face cannot be solved at the same level of thinking we were at when we created them.

Albert Einstein (paraphrased).[1]

What is so different about serving in the 21ˢᵗ century? Every generation, public servants are called upon to face the challenges of their time. While they build on what came before them, they must chart an original course because "we have not been there before."[2] The same is true for the men and women who will accept to shoulder, for a time or for most of their career, the burden of serving citizens in the 21ˢᵗ century.

In some cases, these public servants will be able to stand on the shoulders of those who came before them, but in most cases, they will need to chart a new course since they face new circumstances and unique challenges. They are the first generation of public servants to face simultaneously difficult, complicated and an increasing number of complex public policy issues. They are the first generation to serve in a world where virtual communities contribute to shaping the issues and transforming the context in which public policy challenges must be met. They are called upon to serve in a context characterized by increasing uncertainty, volatility and unpredictability. These are not differences of degree but differences of nature. Such changes and many others transform the role of government, of public organizations and of the people within them.

Public sector reforms before the mid-1990s were essentially related to the challenges of an industrial world in transition. These reforms pre-date the virtual world: today, data, information and content can be transmitted and shared instantly around the globe to be reassembled in unpredictable ways. They pre-date social networking: today, citizens in Brazil can use an Internet blog to collectively elaborate a new framework for Internet governance, and a revolution in Egypt can be triggered on

Facebook, with unpredictable and unexpected consequences. They pre-date the emergence of China, India and Brazil as global economic engines and the transformation of the geo-political worlds that ensued. Public servants serving today and in the coming years will need to find peaceful solutions to an increasing number of complex issues in a world that was inhabited by 1.6 billon people in 1900[3], 6.1 billion in 2000[4] and will soon reach 10 billion.[5]

Their challenge is daunting. They deserve all the help they can get; and this starts by acknowledging that substantial differences exist to serving in the 21st century compared to any earlier time.

DIFFICULT, COMPLICATED, COMPLEX

Governments have always been called upon to make difficult decisions, undertake complicated initiatives and face complex problems characteristic of the period. This is not in dispute. Nonetheless, the current circumstances are different in some ways and more challenging in many others. One challenge is to determine what can be handled in the traditional way and what must be done differently.[6]

Governments have always been called upon to face *difficult problems*. Setting priorities and making choices have always been difficult. For example, eliminating a sizable deficit is "merely" a difficult problem, although it is hard to believe when one is in the middle of such a heart-wrenching exercise. This entails making choices among equally deserving public purposes and making tough decisions about what should be preserved for the future. It requires reconciling future needs with what could garner a sufficient degree of public support in the short term to move forward.

When dealing with difficult problems, governments know what actions are possible, and have relatively good knowledge of their most likely impacts. Some difficult problems are best addressed incrementally, others by swift action. Governments must choose the most promising course of action while recognizing the possibility of unintended consequences. Historical data, computer modelling and expert advice are useful in identifying the preferred course of action. In the end, government will make tough decisions and address difficult problems.

Governments have always been relied on to undertake *complicated initiatives*. These may be complicated because of their scale, scope or the intricate nature of the enterprise.[7] Trade agreements, tax reforms or international treaty negotiations are examples of complicated exercises.

In many cases, the complication stems from the fact that, although there are cause-to-effect relationships, the impact may be difficult to assess because the actions and the results are separated in time.[8] The true impact will only become fully known years into the future. This is the case, for example, for the economic stimulus pro-

grams launched by many countries facing recessions stemming from the global financial crisis in 2008. It is also the case for most social policies, which often have deferred impacts over many years. Careful monitoring, data collection and quantification allow governments to assess the impact of the policies and programs they introduce and to make adjustments incrementally. Over time, government actions and their impact will become fully known.

Some initiatives are complicated because of their intricate nature. These initiatives may involve an elaborate web of actions where a single misstep may lead to failure. Sending a man to the moon, for example, is a complicated and intricate operation with high associated risks.[9]

The failure of a complicated initiative may unleash a complex set of events with unknown consequences. Drilling for oil in the Gulf of Mexico is a complicated undertaking that takes place at the edge of scientific knowledge and engineering expertise. A failure can unleash a complex set of events with unknown ecological, sociological, economical and political consequences. A military operation is a complicated initiative. Successful or not, it unleashes a complex set of events with unpredictable consequences.

Addressing complicated problems requires careful planning, staying power and sustained effort, sometimes over many years.[10] Prudence dictates that risk assessment, contingency and mitigation strategies form part of the approach when undertaking a complicated initiative.[11]

Governments today have the added responsibility of addressing *complex issues*. These issues are characterized by a broad dispersion of power and a high degree of interdependence. They are taking shape in the increasingly uncertain context of our global economy and networked societies. They manifest a high degree of unpredictability and display emergent characteristics.[12] They cannot be solved in the traditional way since they cannot easily be broken apart.[13] More knowledge is unlikely to bring about a solution. In most cases, they require a holistic and participative approach since they require the contributions of multiple actors.[14] Multiple micro strategies are more likely to lead to better results[15] than the centrally conceived master plans used for addressing difficult issues or undertaking complicated initiatives.[16]

Shocks, crises and global cascading failures are characteristic of the world we live in. It is highly probable that their frequency will continue to increase.

Complex problems are different from difficult issues and complicated undertakings. They display dynamic complexity when the interactions across systems are so intertwined that the issue can only be resolved by looking at the system as a whole.[17] The problem of deforestation in the Amazon cannot be resolved by focusing on forest management or any other single dimension. The economic, social, environmental and cultural systems are inexorably linked. A viable solution requires a *holistic un-*

derstanding of the whole environment and a multifaceted approach.[18]

Complex problems may display social complexity when the facts and the nature of the problem are contested and when positions are entrenched.[19] Global warming is a case in point, where the existence of the problem is contested and where data are used as ammunition to further entrench positions rather than to find common ground for action. In such cases, the problem definition that matters most (imperfect though it may be) is one that is jointly arrived at by the various parties working together because it may open up the possibility for joint action. Complex issues require a participative approach to problem definition and to concerted action.[20] Viable solutions exceed the capacity of any one actor on its own.

Complex situations also exist when the future is undetermined, when situations are in a state of flux and can go in a number of directions or when the trajectory from the past is broken.[21]

Generative complexity[22] can bring a society to the limit of chaos. It may lead to conflict and social unrest, but it may also lead to a new path and a better future. The events leading to the reconciliation process in South Africa, to the fall of the Berlin wall and the reunification of Germany, and more recent events in the Middle East and North Africa are of that nature. Complex issues are prone to cascading effects.[23] They can have deep underlying causes that go on for years before reaching a tipping point that will irreversibly change the course of events.[24]

Complex issues require emergent solutions,[25] a willingness to co-create[26] and to "learn as we go."[27] Trying to understand complex phenomena by taking them apart and studying their constituent parts is pointless: emergent situations cannot be understood or addressed that way.

For good measure, we can add to this picture the fact that a number of complicated systems that societies rely upon are becoming more complex as the density of connections within and among systems increases. This is the case for food, water and energy supply systems. It is also true for information, communication and financial systems. Complex and densely connected systems are prone to cascading failures. This is how the inadequate trimming of a tree near a power line can cause a cascading failure across a power grid and a blackout affecting millions of people.[28] This is how a small but faulty computer algorithm at a mutual fund company can trigger the largest recorded drop in stock market history in the United States of America.[29]

Different Issues, Different Ways

So, what does it take to solve some of the most complex and intractable problems of our time? Increased complexity and uncertainty do not mean that governments are powerless, far from it. Instead, they need different approaches and different ways of thinking.

Complex issues involve many interacting agents acting simultaneously. Each action has limited effect, but the power of multiple small steps moving in a similar direction can dramatically change the course of events.[30] Each action transforms the context and affects the actions that others take. The behaviour of the overall system is not linear: in most cases, direct cause-to-effect relationships cannot be found. In fact, the interaction among the various elements is the main organizing principle.

The self-immolation of Mohamed Bouazizi, a 26-year-old fruit vendor, in Tunisia on 17 December 2010 became the tipping point that unleashed a sequence of events that resulted in ousting the country's president 28 days later. Within weeks, the protest movement spread from Tunisia to Egypt, Libya, Yemen and Syria. The events surrounding Mohamed Bouazizi may have been the tipping point, but the root causes were multiple and much deeper. Tunisia has long been plagued by high unemployment, food price inflation, poor living conditions and corruption. The region has lagged behind developments in other parts of the world, and citizens lacked some of the rights many people elsewhere enjoyed.

Many different elements interact with one another in complex systems. The interactions produce emergent phenomena that are greater than the sum of their parts and that transform their constituent elements. Complex systems are simultaneously top-down and bottom-up: they can best be approached as nested networks of relationships.[31]

Today, an increasing number of people, groups and organizations make important decisions[32] in an increasing number of places. As a result, there is growing *fragmentation*. Their decisions are influenced by the decisions of others and by the expectation of what others may do: there is increasing *interdependence*. With fragmentation and interdependence come uncertainty, volatility and unpredictability.[33] The ubiquity of modern information and communication technologies means that these changes can spread at the speed of light. Similar patterns may appear and evolve at different speeds and at different scales. The unfolding of the global financial crisis in 2008 is an example. The patterns of troubling mortgage financing practices in some financial institutions were symptomatic of similar patterns in other financial institutions across the international financial system. All of this puts a premium on the capacity of government to anticipate, monitor and intervene ahead of time when the collective interest demands it.[34]

We live in a networked society that consists of a web of networks interacting with each other. In this context, the role of government is more difficult and challenging than ever. Complex issues put a premium on the capacity of government to take account of a multitude of interdependencies among actors, sectors and parts of the world, and to work across boundaries.

Most complex issues cross political jurisdictions, organizational mandates, soci-

etal sectors, professions and disciplines. Addressing them requires new forms of co-operation and a willingness to co-create solutions. Complex issues are multi-faceted: they play out differently at different scales. Local issues can quickly become global issues, and issues emerging on a global scale may have devastating impacts at the local level.[35] The implications of global warming for residents in the low-lying coastal areas of Indonesia are vastly different than they are for those in the corporate towers of world capitals.

The search for solutions requires the capacity to think holistically, to discover patterns where none were seen before, and a capacity to design and pursue multiple micro interventions that accelerate the potential for learning as we go.[36] The search for solutions also requires taking preventative action to reduce vulnerabilities and path dependencies.

CITIZENS AS CREATORS OF PUBLIC VALUE

Changes in the global context are transforming the role of government, public institutions and public organizations. But the challenge of serving in the 21ˢᵗ century does not only mean facing new issues: it means doing things differently.

Providing Services to Citizens

The public administration model of the 20ᵗʰ century saw citizens as voters and taxpayers with rights and obligations under the law. People were also users and beneficiaries of public services. Governments were the primary provider of public services *to* citizens who had little or no role to play in the development, design and production of public services.

In the public administration model of the early 20ᵗʰ century, people are credited with little or no ability to solve collective problems. As Nobel Laureate, Elinor Ostrom, points out, "One of the distorted views stemming from the presumption the government should fix community problems is viewing citizens…as helpless and incapable."[37] This approach to public administration has "crowded out" the contribution of society in solving public problems.[38] It has devalued the role played by citizens, families and community groups in the creation of public goods.

This view of public administration has had a number of perverse consequences. It leads to sub-optimal public results at a higher overall cost to society. In other words, no society is rich enough to provide for or to buy those things that people, families, neighbourhoods and communities provide freely.[39]

Public policies built on the assumption that people cannot contribute to addressing issues disempower individuals and create dependencies. Excluding people from the design of public policies and the delivery of public services erodes their

self-reliance and depletes the social capital that is essential for society to adapt and prosper in an uncertain environment. Public services designed in this way increase individual vulnerability and undermine social resilience.

When government takes charge of an issue, it "owns the problem." Government becomes responsible for defining the issue, finding the solution and taking appropriate action to bring about the desired outcome. This approach creates an expectation that government has the capacity, the means and the resources to bring about a viable solution. If the results do not meet public expectations, as is frequently the case, government becomes the target of public grievances and faces pressing demands for additional action.

At the root of this situation is the fact that many public policy issues are beyond the reach of government working alone, even when using an increasing amount of public funds. Mounting public costs and declining public satisfaction feed a spiral of declining trust that leads to even more calls for someone—anyone!—to "do something" and "take swift action" even if they are unlikely to bring about a satisfactory solution, since a viable solution would require the active contribution of people working *with* government.

Such situations do not arise because public agencies are doing a poor job or because public servants are somehow wanting compared to their predecessors. They arise because a disconnect exists between what government can actually do and what requires a collective effort that involves government working with citizens, families and communities.

Creating Value with Citizens

People are the main value creators for a number of traditional public goods and an increasing number of public policy issues. To be sure, government is an actor like no other.[40] It can give voice to collective aspirations.[41] It can reconcile conflicting positions and give a sense of direction conducive to collective action. But when it comes to actually producing public outcomes, the capacity of government acting on its own is more limited than is frequently acknowledged.[42] Governments can tax and spend to build public schools; they can provide a publicly funded healthcare system; they can hire and deploy law enforcement officers. Nonetheless, citizens are the main contributors to public health, public literacy and public safety through the decisions they make and the actions they take in their own lives, in the privacy of their homes or in their communities.

Traditionally, public administration has focused on actions within the control of government. This perspective is too narrow to account for the contribution of multiple actors. As a result, it reduces the range of options open to government to achieve better public results at a lower overall cost to society. A government-centric view obscures the long chain of interconnected actions involved in achieving most public

results. It leads to an excessive focus on the efficiency of government operations and pays insufficient attention to the potential for effectiveness that a broader perspective would help reveal.

The presumption that government agencies produce most public goods and services is misleading. More schools do not necessarily lead to better educational results. Beyond the role played by government agencies and the use of public funds, other factors are at play. As the work done by the OECD's Program for International Student Assessment (PISA) demonstrates, a country's relative wealth (as measured by GDP per capita) or the level of public spending per student does not entirely explain its educational results.[43] A culture that values education and learning, a supportive family environment and the commitment and efforts of the learners has a significant impact on the ultimate outcome.

Crowding out the contribution of people is "a waste of human and material resources."[44] It raises the overall cost to society of achieving collective results.

Achieving Results with Citizens

Governments have progressively learned about the limitations of past approaches to solving public policy issues and achieving public results. Shifting from providing service to citizens to achieving results with citizens opens up new avenues to integrate the public, private and civic spheres.

An increasing number of public results and public policies must be rethought from the perspective of public results as a shared responsibility of public agencies working with people and communities. A growing body of evidence exists of strong correlations between the active role of people and communities in service design and delivery and user satisfaction[45]; between participation and life satisfaction[46]; and between an active citizenry, self-reliance and community resilience.[47]

The concept of co-production, which is the shared and reciprocal activities of public agencies and people to produce results of public value, helps break away from the traditional concepts of the production of public services through direct government delivery or through contractual arrangements.[48] The central ideas of co-production are that people using public services are not a drain on the system but an asset, and that no country is rich enough to ignore this source of wealth.[49] The relationship between public servants and users shifts from one of subordination and dependency to one of parity, mutuality and reciprocity.

Co-production is a non-contractual arrangement that helps bring government, people and society together. It operates at the individual and societal levels. At the societal level, it brings together the non-market and market economies.[50] It provides an opportunity to restore the balance between what government is best positioned to do, what citizens can do for themselves, and what is best accomplished together.

Modern information and communication technologies are accelerating the pace of change by giving people and government the means to work together in new ways.[51] Web 2.0 technologies and applications are creating new forms of social interaction. Knowledge can be assembled, recombined and repackaged in new and powerful ways to further accelerate the pace of innovation in society. Technology is not simply an enabler or a driver of change: it is part and parcel of the way we live in the 21st century. Governments are undergoing an unprecedented transformation from a "government-to-you" to a "government-with-you"[52] approach that entails a profound shift in relationships and in the exercise of power in society.

SERVING BEYOND THE PREDICTABLE

The role of government in the 21st century is not limited to what government can do on its own or even what it can co-produce with others. Its role extends to serving the public good and the collective interest in all circumstances: when government is directly involved, when it creates an enabling environment for others to act or when society enjoys great freedom to pursue individual interests.

Government is the ultimate guardian of the collective interest, in good times and bad, in predictable and unpredictable circumstances. It is the steward of the collective interests and the insurer of last resort for the worst failures and crises of our times, be they pandemics, natural disasters, economic meltdowns or social unrest.

Governments are called upon to serve beyond the predictable and in the expanding public space forged by the interaction between our networked society and multiple virtual communities. They must act with imperfect knowledge, while knowing that many events are beyond their control. Their role is to leverage the collective capacity to influence the course of events toward a better future and to help society adapt and prosper even in the face of adversity and unforeseen circumstances.

Shocks, Risks and Cascading Failures

In an increasingly uncertain, volatile and unpredictable context, the notions of risk and risk management take on a different meaning. Recent events are stark reminders of the role of the state and the impact of unforeseen events on government. The earthquake on 11 March 2011 in Japan was the most powerful in that country's history. The toll in death and missing people exceeds 25,000. The psychological damage is incalculable. The economic losses are estimated to be over US$300 billion. This far exceeds what private insurers can absorb. A US$50 billion publicly-funded reconstruction plan has been announced, suggesting that households and government will bear most of the financial burden. The Japanese have an admirable resilience and a strong capacity to come together in the face of adversity. Reconstruction will take place and Japan will prosper again.

The role of government in serving the collective interest in the face of catastrophic events with low probability of occurrence extends to prevention, mitigation and decision making on the level of risk society is able to bear. In the end, government and society as a whole will bear the costs. Governments can do much to build the capacity of their societies to absorb unpredictable shocks, and they may be wise to build some degree of redundancy in the most vital systems to help society rebound in the aftermath of unforeseen events.

Crises and shocks are not necessarily the result of natural disasters. They are more frequently the result of human activities. The financial crises and bank failures that began in 2008 were preventable. They may have been the result of a number of factors, including lax oversight functions, weak regulatory frameworks, greed, excessive risk-taking and an excessively laisser-faire approach on the part of many actors, including governments. As a result, massive private risks were converted into public risks as the insolvability of financial institutions was converted into a national deficit and debt, the impact of which society will bear for years to come.

In our globally connected world, the economic, social and political systems are intertwined. A precautionary approach to serving the public interest has implications for the role of government well beyond the programs under its control.

Government functions in an ecosystem of interrelated systems that are constantly adapting to one another and that bring the economic, social, civic and political spheres closer together.

Connected World and Virtual Communities

We live in a connected world where virtual communities play a significant role. Between 2000 and 2008, the number of cell-phone users increased from 1 billion to more than 4 billion, and the number of Internet users from 2.5 billion to more than 10 billion.[53] As of 2011, more than a dozen virtual communities had over 100 million active members.[54]

The growing array of technologies that connect people with information and with each other are not simply enablers or drivers of change in society; they are part of how we live in the 21st century. They make it remarkably easy to access and disseminate ideas and to collaborate close to home or across vast distances. Modern information and communication technologies and the networks of relationships they enable are accelerating the pace of change. This has important implications for government.

The rise of social networking and social media is causing a "disruptive shift" in the traditional balance of knowledge and decision-making power between government and citizens. The best insight about emergent phenomena may not rest with government. It might lie in self-organized social networks and in the multiple relationships citizens have built in their local or globally dispersed communities of interest. The best means of action may not be in government's hands. Citizens and other actors have invaluable information and capacities to offer. Enabled in part by modern technologies, citizens and other actors can devise innovative solutions to public issues.[55] Governments need to leverage the power of others. The knowledge, capabilities and loci for action are broadly dispersed.

To do this, governments need to participate in social media and social networking platforms, most of which are decidedly more open and dynamic than governments are accustomed to.[56] In these virtual communities of interest, the contributions people make are more significant than the positions they hold; relationships involve high levels of reciprocity. Governments cannot simply tap into these communities to "take" ideas—they must "give" as well. The power of social networking is available only to organizations prepared to participate and share.

A more connected world is changing the way public organizations operate. It assumes that it is easy to connect people, knowledge and ideas when and where needed, and that it is possible to connect communities, networks, organizations and institutions at low or no incremental cost. This connectivity enables distributed operating models. It represents a dispersion of power and authority in society. It generates "systemic serendipity,"[57] where distributed knowledge is re-assembled and reconnected in unpredictable ways.

While the Internet and social networks can accelerate the pace of innovation, they create new risks and give rise to new challenges for government. In the Internet age, it is difficult to know "what's what." Before the information and communications "explosion," public servants drew from a limited set of sources for facts, evidence and analysis. They could easily verify the credibility of these sources and the reliability of the information. The exclusivity of this model was its weakness. The connected world offers vast amounts of information from diverse sources. It puts the knowledge of the world at our fingertips and yet makes it increasingly difficult to answer "How do we know what we know?" This puts a premium on government's ability to discriminate credible from non-credible ideas and to extract meaning from diffused and disaggregated information.

In the Internet age, good and bad analysis, trustworthy information and misinformation can all "go viral." Viruses play a positive and negative role. In nature, they connect and recombine DNA in ways that contribute to evolution. They can also have a devastating impact. In the same way, data and information can be problematically recombined, misconstrued and misused. Social networks can be effective instruments for quick mobilization and, just as some viruses spread fast, information can go viral well before government has time to understand an issue or consider a possible response.

Modern information and communications technologies are compressing time-

lines. Traditional public administration values rational planning that balances short-, mid- and long-term priorities. Those in government today need to manage all these timelines simultaneously, focusing on what is happening in "real time" without losing sight of what matters most for the future.

Like any tool, the Web has potential for good or bad. Unlike other technologies, however, it also has the potential to self-correct the problems it creates with the same ease by which it can spread misinformation. Wikipedia, where contributors and ultimately a hierarchy make sure that the information is as accurate as possible, is a prime example. The question is not whether the Web is good or bad. It is part of the way we live and of who we are as citizens of the world.

Chapter 3

A New Synthesis of
Public Administration

We are not what we know but what we are willing to learn.

Mary Catherine Bateson.

The ideas leading to the New Synthesis Project took shape over several years, but most of the actual work took place between the spring of 2009 and December 2010. The project was launched explicitly to explore the new frontiers of public administration in the hope of providing practitioners with a narrative supported by powerful examples that would better equip them to face the challenges of serving in the 21st century.

> *Public administration needs a new synthesis; one that will coherently integrate past theories, conventions, principles and practices of enduring values with new ones that respond to today's challenges.*[1]

A significant amount of the work was accomplished through an international collaborative network comprised of practitioners and academics from Australia, Brazil, Canada, the Netherlands, Singapore and the United Kingdom. The participants shared the view that there are significant differences to serving in the 21st century. They also shared a common commitment to preparing their respective countries for the challenges ahead. By working together, they were accelerating their own learning and benefiting from the diversity of ideas and experiences that a collective international network can provide. The network was deliberately kept small to ensure rapid progress. Nevertheless, a high level of diversity of practice was ensured by bringing together representatives from countries large and small, densely populated and not, with varying degrees of economic development and different models of governance including presidential and parliamentary systems.

Each participating country contributed actively to the research and provided case studies. The most important discussions took place around a series of internation-