

THE FUTURE OF GOVERNMENTS

IN A WORLD OF RESOURCE CONSTRAINTS



Creating a citizen experience administration and economy

Government agencies are being forced to operate with constrained resources – smaller budgets, fewer skilled workers and diminishing natural resources – while the global economy remains in a fragile state. Working with these constraints, governments are identifying and creating innovative programs to increase citizen satisfaction levels, reduce costs, and implement efficient operational procedures.

Governments are similar to retail, transportation and CPG organizations in their desire to increase citizen satisfaction levels, and lower operational costs to save dollars for essential citizen initiatives; while they are dissimilar in not requiring citizens to spend money to remain profitable.

To ensure success in the future, agencies must provide transparency in governance, connect with the citizens, exhibit accountability and concern for the environment and public spending, improve the employability of its workforce, and at the same time, provide assurance of a safe, free environment.

Trends that will impact the future of government agencies and universities include:

- Transforming the IT of public sectors to handle 'simplified' government processes and build an agile and responsive system
- Educating the workforce to address the skilled labor shortage and stimulate economic growth
- Using advanced analytics to manage operational services under a constraint of reduced natural resources
- Designing technology to increase university enrollments and create a culture of performance measurement
- Allowing Freedom of Information-'Unfiltered & Controlled by Me'- the Request from Citizens
- Assuring the resumption of normal business operations after recovering from constraints imposed by natural calamities

- Creating paperless universities and government offices

The future lies in creating a "Citizen Experience Administration and Economy".

Transforming the IT of public sectors to handle 'simplified' government processes and build an agile and responsive support system

Redesigning administrative processes to become 'Lean' requires tremendous support from government IT departments. This type of activity requires these behemoth organizations, which are swaying under the burden of obsolete technology, un-utilized software licenses and over configured hardware, to review and improve its technology adoption and utilization. Government agencies worldwide are focusing on transforming their administrative departments, services and 'pre-dated' processes. The intent is to make the citizen the major factor in every process, and reinforces the primary objective of each department to better serve the citizen. (e.g. Process revamping and simplifying citizen-critical services such as Immigration/Naturalization, Provident Fund Utilization, Taxation, Educational Finance, and Housing are part of the strategy of governments in the US, France, Australia, and Singapore.)

To support these mammoth streamlining and optimization exercises, governments are rewriting their IT strategies to make efficient use of their existing IT infrastructure, and control capital and operational costs.

Some approaches being considered:

- Revamping applications and systems supporting citizen-critical services
- Alternate sourcing models such as Cloud Computing (SaaS, IaaS and PaaS)
- Consolidate procurement of licenses to reuse shared investments, including people and existing technology across multiple agencies

Public-sector CIO's are now focusing on the opportunity to better position their tactical and strategic sourcing decisions vis-à-vis the policy changes/implementation being considered, to ensure that technological decisions will help achieve greater value and enable better services to both people and business while maintaining the necessary security and privacy levels.

Wipro has worked with many retail and CPG corporations to enable them to transform, rationalize and streamline their IT expenditures. We can utilize the same expertise, process and tools to help Government IT departments achieve cost savings from an optimum IT environment.



Shared Services Trend: Adoption of service delivery frameworks built on lean principles can help governments develop an integrated delivery model addressing the needs of various agencies. To achieve reuse and sharing of investments/ assets/resources, the model of “flex delivery” can be implemented, which would enable agencies to leverage a large flexible pool of resources and skills based on individual requirements without having to carry the costs during lean periods. “Flex delivery” includes a pay-per-need option, allowing capacity levels to be changed based on need cycles.

Cloud Computing Offerings: Wipro has a wide array of cloud computing offerings in the layers of IaaS, SaaS and PaaS. Cloud computing is widely seen as an area where agencies can reap some fiscal savings, although not necessarily in an immediate timeframe or in substantial amounts. While cloud services are not free of charge, the implementation cycle is shorter, which enables a more rapid deployment of services.

Educating the workforce to address the skilled labor shortage and stimulate economic growth

In the scenario of constrained resources, the lack of a skilled workforce has negatively impacted the economies of many countries. To stimulate economic growth, attention is now focused on the proven catalysts of workforce expansion, skill set enhancement, and better employee utilization.

- **Build replica campuses** of established universities on foreign soil to ensure that students obtain the benefit of a world class education at an affordable cost and avoid the problems with travel, visa, financial aid, health, terrorism or conflict that may emerge.
- **Set up cooperative programs** with foreign universities to provide an advanced education at an affordable cost and globalize the country's education to attract students from foreign countries.
- **Design specialized professional/vocational courses** along with the universities and implement initiatives such as “earn while you learn”, providing a steady stream of trained professionals to reduce the labor shortage and help departments control escalating costs.
- **Community platform for education** would be the cohesive requirement in the near future with an opportunity to combine technology capabilities with the practices and theories of learning communities and enable collaborative learning between students and faculties throughout the world.

- **Social technology-aided learning** would provide a richer educational experience for long distance or virtual classrooms, based on the technological trends of collaboration and social media ensuring that the foreign professors can interact and teach students across multiple countries and share material/textbooks through effective networking techniques.

Wipro is in discussions with the University of Wollongong (UoW) to implement an advanced educational program for undergraduates – Wipro Academy of Software Excellence (WASE) – a joint initiative that would include a special curriculum encompassing the technical and functional aspects of the department. The academy would produce a steady stream of trained professionals who would be immediately available for employment within university IT departments.

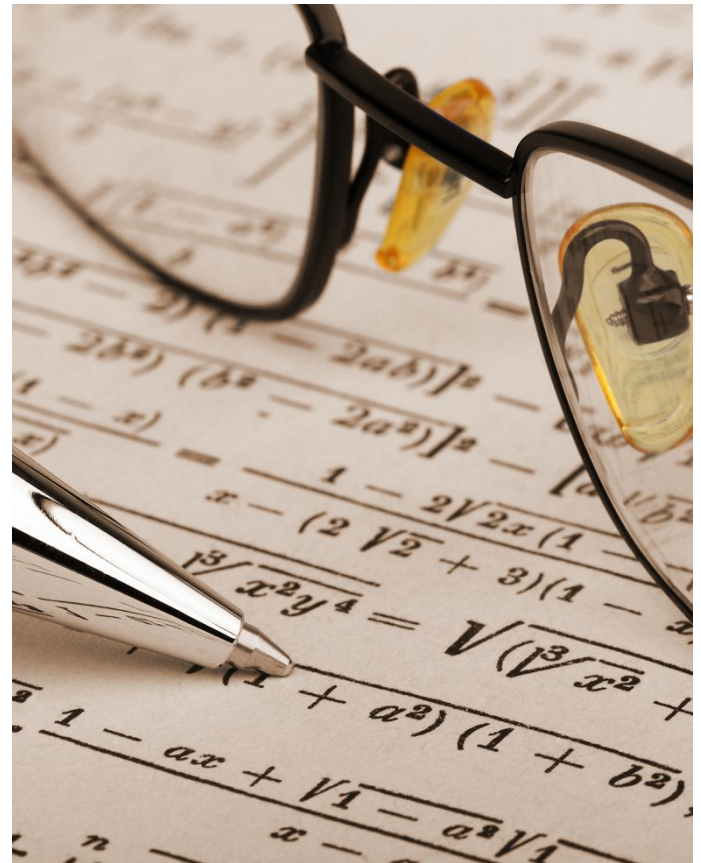
Wipro's social media and online capabilities can be utilized to develop the community platform for universities, enabling them to collaborate internally and externally.

Advanced analytics to manage operational services under a constraint of reduced natural resources

Space/land, water, oil/gas, and energy are the fastest-depleting resources that government, universities, corporations, and citizens have to face. Governments are required to set an example and implement policies and regulations ensuring that these resources are responsibly consumed.

Governments can adopt measurement criteria to reduce the consumption level of critical resources, such as water and energy. By developing these measurement technologies and leasing/providing them to corporations, retailers and individual households it would enable and encourage everyone to reduce waste.

Public sector utility companies are adopting 'smart metering' solutions combined with advanced analytics to monitor usage and control production and distribution. Commercial companies like Dow Chemical and Unilever have been utilizing systemic measurement of its water usage to reduce their total water consumption, and many universities have implemented programs on waste, carbon and energy management. (Examples include the University of Waterloo, University of Missouri, Indiana University, University of Bristol, University of Newcastle, University of Sydney, University of Michigan, and the National University of Singapore.)



Wipro has a framework and service offering to manage energy waste, as well as a framework to measure the carbon footprint. Our specialized tools will enable departments to measure and analyze the respective use and waste associated with each resource. Our expertise in this arena can be leveraged, from our in-house eco-friendly buildings and waste management to our expertise with retailers.

Our capabilities in the field of analytics, combined with the use of predictive tools, can also provide assistance with future projections – how much emission can be reduced, how much water/energy waste can be reduced, and the quantity of metal that can be recycled.

Designing technology to increase university enrollments and create a culture of performance measurement

The Department of Education in almost every government is faced with the unique challenge to attract students to its universities and retain them until graduation. McKinsey estimates that the US will need an additional one million graduates each year by 2020 to sustain its economic health, an

increase of 40% from today's figures. This increase, while important to sustain economic health, puts a heavy strain on already financially-plagued departments and universities. According to the McKinsey study, it currently costs almost \$52B/year to produce a graduate. In addition, the dollars per student have declined in real terms, while the staff/student ratios have dramatically increased. To meet this need and challenge, universities are improving their productivity level with the correct policy support, quality education and proper management.

Short and long-term approaches will include the use of technology, social media, social networks to build connections between students and faculties, university branding techniques, and new teaching paradigms such as virtual learning and connected classrooms.

Allow Freedom of Information-‘Unfiltered & Controlled by Me’- the Request from Citizens

Government sponsored censorship enforced in Middle East, Egypt and China would not be a trend that many other countries would follow, as citizens are now asking for freedom of information and transparency in government processes.



Governments will need to revise information strategies, in the context of transparency, open governance and reforms to the Freedom of Information Act. They will also need to consider adequate technology and security support to enable this adoption, especially in the wake of Wikileaks.

Citizens and digital natives are also raising concerns about the filtering/customizations being done by web services companies using search engines. This is creating "filter bubbles" (a term coined by Eli Pariser, a pioneering online organizer and author of "The Filter Bubble") and providing information repeatedly to the viewer as decided/controlled by the personalization. The 'onliners' ask now is for control/transparency on these filters to retain control of the information that trickles into their screen to avoid what might be narrowing their world view.

Wipro's citizen experience capability coupled with our internet expertise can be leveraged by government agencies to ensure that censorship is performed on a per-need basis and configurable as warranted.

Assuring the resumption of normal business operations after recovering from constraints imposed by natural calamities

Climatic conditions are changing throughout the world, and recently, there have been many instances of natural calamities bringing life to a standstill in many countries. Governments equipping themselves with disaster management capabilities will also equip themselves with "faster return to normalcy" capabilities in the near future. New technology trends that could be adopted for this specific purpose could include internet utilization, collaboration sites, and cloud solutions. (e.g. New Zealand recently cancelled its 2011 census exercise due to an earthquake in Christchurch. The cancellation resulted in a write-off of \$90 million. To avoid such huge write-offs and allow a region to quickly return to normal, governments can adopt technology such as electronic forms and web aids. Using the census example, citizens could register and provide details online instead of manually filling out printed forms. This would enable the data to be recorded faster, and the census-taking exercise would be completed faster with more accurate results.)

Wipro's disaster management capabilities coupled with our delivery and quality capability enables us to develop solutions which can ensure business as usual faster. The solutions we develop for some of the world's biggest retailers have been built with a robust fail-safe approach.

Paperless Universities and Government Offices

Reducing the consumption of water and forest products will force government agencies and universities (the major consumers of paper) to explore alternatives provided by technology. Well-known devices, such as the Apple iPad® and Amazon Kindle™, which display digital content with amazing clarity, will soon find a new breed of consumers within the halls of education. Faculty and staff could also utilize these devices to capture and store information.

University administrators, faculty members and students will need to convert traditional paper-based learning practices to electronic-based methods. Digital textbooks and eLearning techniques are already in existence. However, the future would call for extending this form of digitization to include assessments, grading, certifications and graduation. Each student would only need to carry an electronic device, for classroom training and assessments.

Eliminating paper may seem to be a herculean task, but it is not impossible. Many existing processes within universities and governments are digitized and online. The requirement would need to be broadened. The replication of paper must be avoided, with a new reliance built on digital records instead.

Overall, these trends signify the future state of governments to implement a Citizen-Centric Model utilizing technology to face the challenge of operating within an environment of constrained resources.

Wipro has the ability and experience to work with governments and universities, and enable them to build more sustainable, collaborative and effective methods for operation and governance.

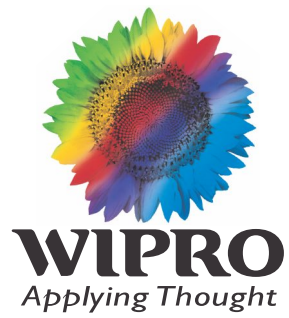
Reference:

- Eli Pariser, "Beware Online "Filter Bubbles" - http://www.ted.com/talks/lang/eng/eli_pariser_beware_online_filter_bubbles.html
- How to make US colleges work better- BOOSTING PRODUCTIVITY IN US HIGHER EDUCATION- <http://e.mckinseyquarterly.com/11042854alayfousublvuxraaaaaaa txh6bzcjvo5i4yaaaaa>



About Wipro Technologies

Wipro Technologies, the global IT business of Wipro Limited (NYSE:WIT) is a leading Information Technology, Consulting and Outsourcing company, that delivers solutions to enable its clients do business better. Wipro Technologies delivers winning business outcomes through its deep industry experience and a 360 degree view of "Business through Technology"– helping clients create successful and adaptive businesses. A company recognized globally for its comprehensive portfolio of services, a practitioner's approach to delivering innovation and an organization wide commitment to sustainability, Wipro Technologies has 120,000 employees and clients across 54 countries. For more information, please visit www.wipro.com



DO BUSINESS BETTER

WWW.WIPRO.COM NYSE:WIT | OVER 120,000 EMPLOYEES | 54 COUNTRIES | CONSULTING | SYSTEM INTEGRATION | OUTSOURCING

WIPRO TECHNOLOGIES, DODDAKANNELLI, SARJAPUR ROAD, BANGALORE - 560 035, INDIA. EMAIL: INFO@WIPRO.COM, TEL: +91 (80) 2844 0011, FAX: +91 (80) 2844 0256
North America South America Canada United Kingdom Germany France Switzerland Poland Austria Sweden Finland Benelux Portugal Romania Japan Philippines Singapore Malaysia Australia

IND/RB/MAY2011-074