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## Improving the Efficiency of Tax Administration Through the Effective Use of Information Technology

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## Presentation Outline

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- Role of Information Technology in Effective Tax Administration
- Evolution of Integrated Tax Administration Information System Solutions
- Characteristics and Capabilities of Tax Agencies
- Challenges of IT Support of Tax Administration
- "Just in Time" Solutions
- Important Considerations
- Commercial-Off-The-Shelf (COTS) Solutions
- Deciding Which Way to Go
- Lessons Learned
- A Challenge to Solution Providers

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## Information Technology Has a Big Impact on Tax Administration!

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- Increased efficiency of tax administrators
- Better taxpayer service
- Better compliance
- Increased revenue

**The technological evolution**

- "The rapidly increasing pace of technological change will have a significant impact, positive and negative, direct and indirect, on Tax Administrations. Information technology, which includes telecommunications and computerized systems, looks set to increase productivity substantially, with savings in time as well as money, while at the same time affording customers a better service. On the other hand, the human element is affected by technological changes in different ways, by making jobs more important for some, while posing a threat to others....."

Source: CIAT Handbook for Tax Administrations - July 2000

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## Example of the Huge Impact of Effective IT Solutions



- **California Franchise Tax Board Integrated Non-Filer Compliance (INC) System<sup>1</sup>**
  - Integrated non-compliance project
  - As of August 2002, the Franchise Tax Board had taken in an extra \$116 million in tax revenue with the compliance system since 1999
  - It has received several awards.
  - Cost of INC system recovered within the first year.
  - It was about “clean and reliable” data
- **This is possible in other jurisdictions**

<sup>1</sup> [http://www.gcn.com/21\\_24/tech-report/19653-1.html](http://www.gcn.com/21_24/tech-report/19653-1.html)

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## Tax Modernization (Reform) vs. Information Technology



- Economists: “It’s about tax reform, not Information Technology”
- Technologists: “But without information technology, tax reform cannot succeed!”
- It’s “kind of” like money – information technology is not necessarily the most important thing, but it is at least second to whatever is in first place.

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## An Integrated Tax Information System: What We Should Get



- **Tax Information Systems**
  - Integrated
  - Available tools to support tax administration
  - Effective management

• *The technological evolution*  
– All of the Tax information systems and data bases should be integrated and have available the tools required to combat tax non-compliance; facilitate tax compliance and satisfy information requirements at the operational, managerial and internal control levels for the effective management of a modern Tax Administration.”

• *Source: CIAT Handbook for Tax Administrations - July 2000*

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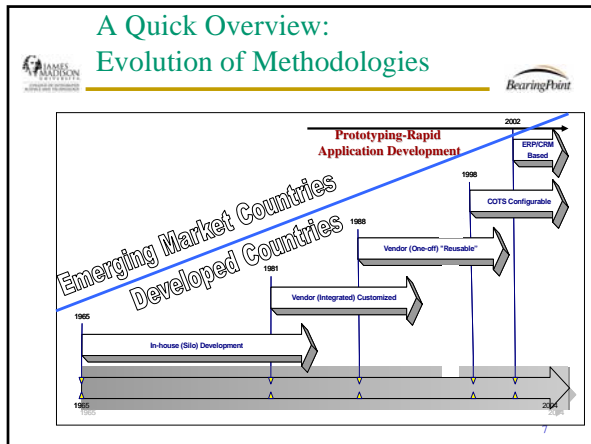
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### Tax Agencies – Are They Different or Similar?

- Thousands of tax agencies in the world
- They are all different (so they say)
- Yet, in so many ways they all similar
- But, one thing is for sure: *there are significant challenges and problems in implementing effective software solutions for tax administration*
- History can help us determine the solutions of the future

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### State of Information Technology in Revenue Agencies

Developed	Emerging
Significant Information Technology in Place	Often little or no technology in use → Manual Records
Staff trained in technology	Little or no training Many, many agency employees!
Legacy Software Applications Transition to newer solutions.	Maybe PC applications May have tried automation with unsuccessful results
Centralized or integrated database	Challenge of distributed data with no central access
Citizens access to the Internet	Limited or no access to the Internet – but improving.

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Some Examples of Challenges for IT Support of Tax Administration

- **“Pushing” Technology**
- **Too Much, Too Soon Syndrome**
- **Limited funds, Firm Deadline (“short fuse”)**
- **Multiple Attempts**
- **“Guarantees” for Future Failure or Difficult Problems!**

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“Pushing” Technology

- **Indonesia**
  - In 1984 commitments were made by the IT director to Indonesian senior government officials to provide for data entry of tax returns at ALL (100+) district offices
  - Limited technology available to do this
  - It had to be done!
  - Implemented data entry system on PC/XTs with Digital Research’s Starlink multi-terminal operating system (Basic)
  - But, got the capability promised. (“Failure was not an option! – *Apollo 13*”)

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Too Much, Too Soon Syndrome (Racing the Clock)

- **Examples**
- **Unrealistic schedules, sometimes driven by other organizations’ expectations!**
- **This problem certainly is not limited to the support of tax administration, but it has been prevalent in many IT projects for tax administration.**



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### Multiple Attempts at Implementing IT Solutions for Tax Administration



- Numerous agencies have tried many times to implement the “ideal” solution
- Some seem to have tried EVERY approach in the evolution of integrated tax administration information systems
- Recent advances in solution design and capabilities have finally provided successful solutions (more on this later)

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### “Guarantees” for Future Failure or Difficult Problems



- Wrong or outdated software development tools
- Proprietary tools that are all too often soon outdated
- Ultimate Disastrous Approach
  - No experience
  - No subject matter knowledge
  - Unknown “business entity”



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### Need for “Just in Time” Solutions



- USAID projects and projects funded by some other donors often do not include sufficient budget allocation for long term IT solutions
- Hence, it is often necessary to implement a “just in time” short term solution to go “live” with reformed or new tax

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## Limited Funds Require the Use of Innovative Solutions



Country	Tax	Innovation
Malawi	Income/Sales Tax	PCs, Dbase III, Rapid Prototype
Kenya	Income Tax	Rapid Prototype, Simple Registration
Egypt	General Sales Tax	PCs (386), Xenix, Informix, Arabization
El Salvador	Income Tax, Bank Payments	Credit Card Machines in Banks

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## “Just in Time” Hardware & Software



- **Initial Mandatory Components**
  - Pre-Registration
  - Registration
  - Returns Processing
  - Payment Processing
- **Rapid Application Development-Prototyping in determining requirements**
  - Limited tools in the early days
  - Various developer studios available today
- **Early simple successes can get user “buy-in”**
- **Also needed because implementation dates are often advanced**

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## Short Term Methodology for “Just in Time Solutions”



- **Innovation – Hardware and Software**
- **Scale down functionality for the initial solution**
- **Use local technical team members and international advisors**
- **Rapid application development (prototype)**
  - Possibly “Throw away”
- **MUST be ready to support new tax when necessary**
- **Phased implementation (to add functionality over time)**



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**Important Considerations**

- **Ease of Use (keep it simple)**
- **Easy to learn tools**
- **Training of local team members**
- **Hardware support**
- **Long Term Support**
- **Infrastructure support**
  - Power
  - Telephone
  - Networking
  - Facilities
- **Database for long term use**
- **Plan for evolution to “permanent” solution**
- **Validation and Audit Trails**
- **User Training**
- **Localization:**
  - (Natural) language
  - Currency

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**Important Considerations (continued)**

- **Most Important: *Support the tax to be introduced or reformed***
  - When required!
  - May require a “just in time” interim solution
- **Support all functionality**
  - But could possibly be phased in over time
- **Eventually support all taxes with**
  - Common collection
  - Common Audit
  - Case management
  - Workflow
  - Multiple filing/payment streams
  - Web services

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**Integrated Tax Administration Information System Design & Implementation Issues**

- **At first glance requirements seem simple**
  - At least in the context of a single tax
- **History shows that the design and implementation of an integrated tax system is not easy**
  - Complex requirements when all functionality and taxes must be supported
  - Very expensive
  - Takes far more time than expected
- **Tax specialists (international and local) must be involved in all phases**
- **Information Security is far more important than it was a decade ago!**



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## The Challenges of Building a Configurable COTS Solution



- Most projects begin with a single tax
- Developed with a particular customer
- Funded by a particular project
- Difficult to get a general view of requirements for different jurisdictions and taxes
- No time or funding to design the system to be “totally” configurable
- Calling these systems reusable, does not mean they are easy to port to other taxes and jurisdictions
- But, there are now cases of successful Commercial-Off-The-Shelf (COTS) solution implementations!

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## Features of a COTS Package



- Truly configurable
- Best Practices embedded in the solution
- Easy to Use
- Same look and feel
  - Across functions
  - Across taxes
- Designed to support multiple taxes in an integrated environment
- Support multiple databases
- Provides for localization
  - Natural language
  - Currency
- Uses current technology
- Periodic Releases
- Web enabled
  - Browser-based
- Accepts input from multiple sources
- Interfaces with other systems
  - Budget System
  - Banks
  - Notices
  - Workflow
- Maintainable
- Reusable
- Scalable

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## Some COTS Characteristics



- The Context
  - A Stand-alone package
  - ERP-Based
- Proven Track Record
  - Success in Multiple Agencies
  - Accelerated Schedule
  - Reduced Cost
  - Reduced Risk
- Basis for Long Term Solution
- Embedded Best Practices
- On-going maintenance available. Hence, there are periodic updates to take advantage of or keep up with the latest technology

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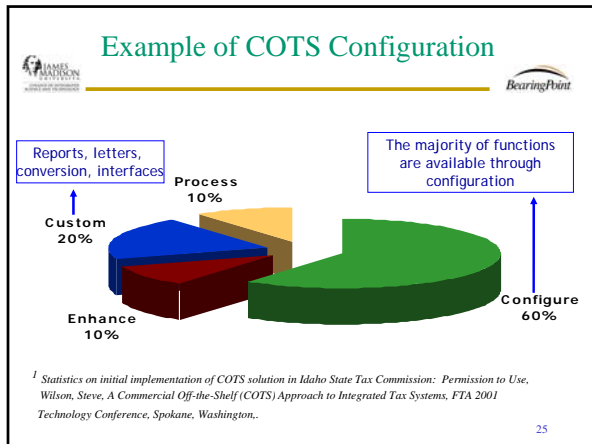
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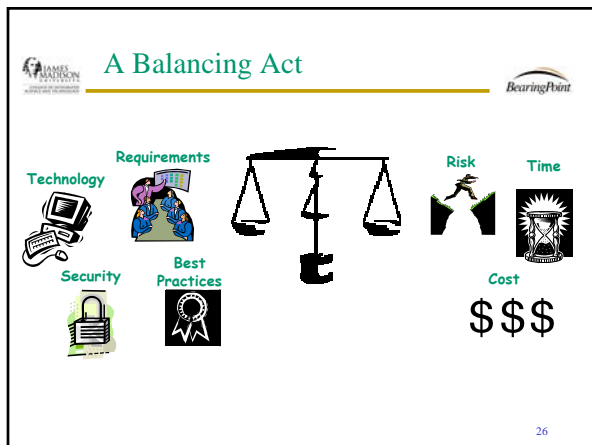
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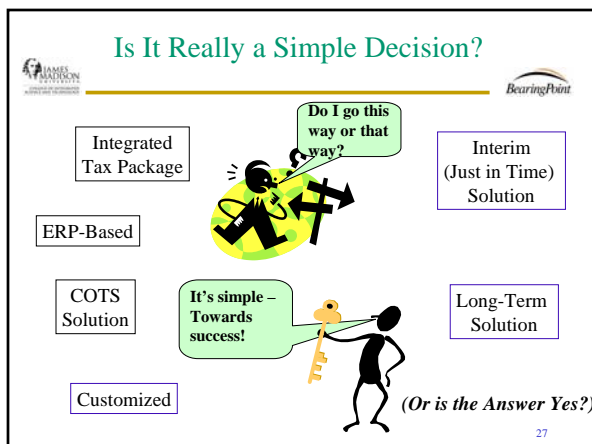
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**Lessons Learned - 1**


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- **Rapid Application Development can provide an initial (short term) solution, particularly when a project budget is limited (*could start with a previously developed solution*)**
- **But, there must be a plan to migrate to the long term solution.**
- **Integrated Tax Administration Information System projects are complex**
- **Avoid large scale projects that are dominated by custom development or modifications.**

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**Lessons Learned -2**


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- **Use site visits or have solution demonstrated prior to beginning procurement or as part of the procurement process to validate each potential solution**
- **Use **PROVEN** solutions**
  - COTS Approach if possible (recent history in the U.S. easily leads one to believe that COTS solutions are available)
  - Proven Reusable “Package”
- **Subject matter specialists are required**

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**Lessons Learned - 3**


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- **The Job of IT is to support effective tax administration – we must get the solution completed on schedule!**
- **But if there are delays in completing the IT solution, do NOT implement a new or reformed tax if the solution is not ready! (The results will be disastrous)**
- **Plan for “fall back” solutions (e.g., scale back functionality, use alternate hardware site, etc.)**
- **Be realistic about the schedule throughout the project.**

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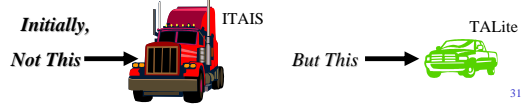
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## Challenge to Solution Providers



- **Solution providers should consider developing a Tax Administration “Lite” solution for use as a first step in supporting a new tax in emerging market countries**
  - Support a single tax
  - Simple
  - Rapid implementation
  - Provide desperately needed “front end” functionality for emerging market countries
  - Should be able to evolve to the solution provider’s integrated tax solution



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