e-Government: 1st Leaders Meeting

Technological Platforms for e-Government

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What is e-Government?

- Electronic government is more than a Web site.
  - It is connecting a government with its stakeholders on a scale that until now has been unimaginable.
- "It is leveraging the Internet to simplify government. It is that simple and that profound."
- Public sector organizations will have to adjust their relationships with citizens, businesses, employees and other public agencies.

Why e-Government?

- The information society is prompting many organizations to adopt e-Government initiatives, seeking the opportunity to:
  - *Deliver electronic and integrated public services.*
  - *Bridge the digital divide.*
  - *Achieve lifelong learning.*
  - *Rebuild their customer relationship.*
  - *Foster economic development.*
  - *Establish sensible policies and regulations.*
  - *Create a more participative form of government*

Source: Microsoft e-Goverrment Vision

Why e-Gov.?: Three Perspectives

- CITIZEN PERSPECTIVE
  - Citizens increasingly expect governments to perform more like commercial entities.
  - Citizens also are not interested in which layer of bureaucracy or which public official is responsible for a specific government program or public service.
  - Also through a single access point, citizens can better articulate their expectations and needs from government. It reinforces their participation in local community life and the democratic process since they can interact with government and access public information, official documents and administrative proceedings.

Source: Microsoft e-Goverrment Vision

Why e-Gov.?: Three Perspectives

- BUSINESS PERSPECTIVE
  - When governments create new efficiencies, they also create a healthy business climate and provide advantages to local firms over those in other jurisdictions.
  - Governments can further create a healthy business environment by ensuring the right infrastructure is in place to make it easy for companies to go online.
  - The delivery of integrated, single-source public services creates opportunities for business and government to partner together.

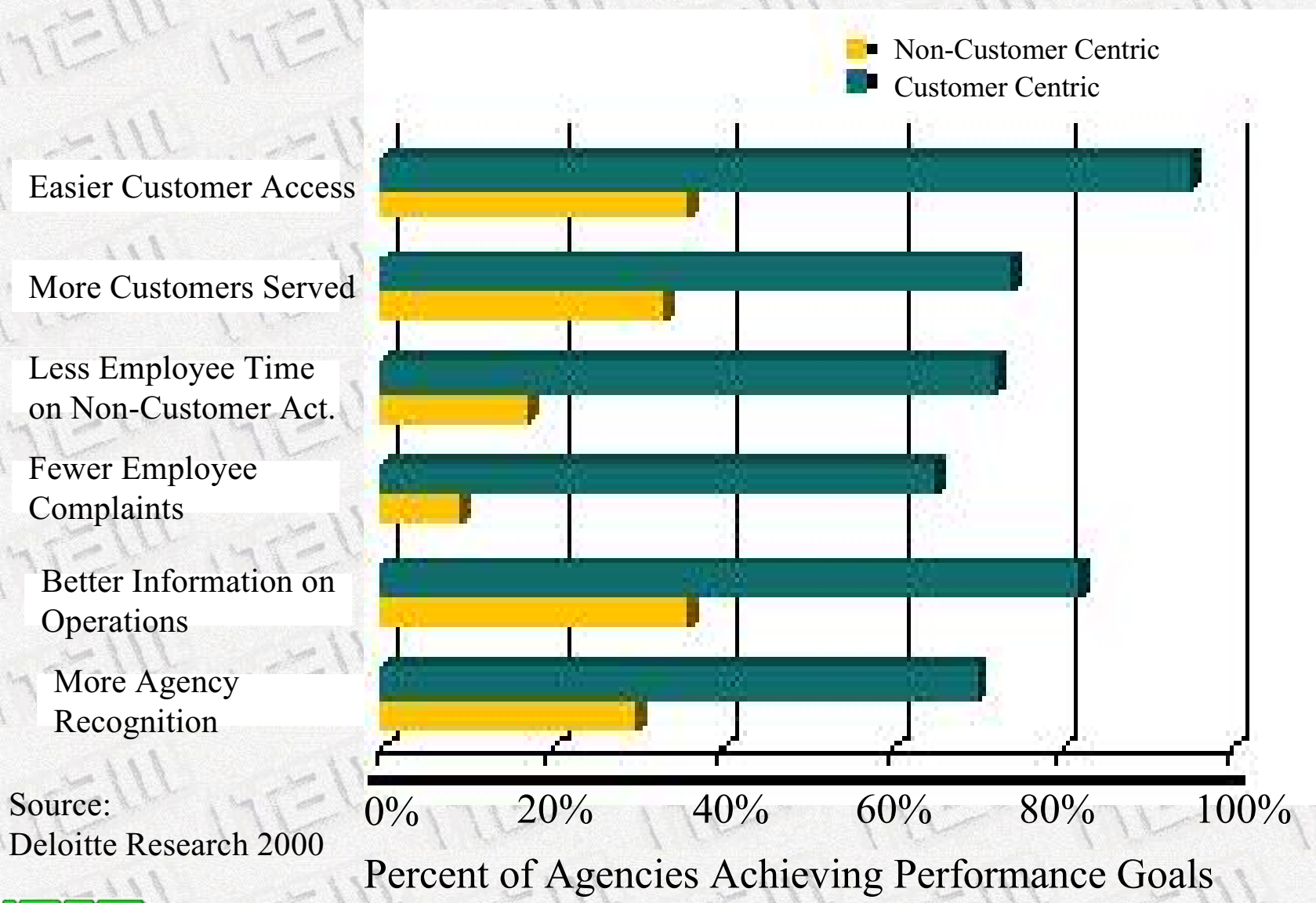
Source: Microsoft e-Goverrment Vision

Why e-Gov.?: Three Perspectives

- GOVERNMENT PERSPECTIVE
  - Governments are able to change citizens' perceptions of poor quality of public service and regain public trust and confidence by putting the citizen at the center of any service improvement initiative
  - Recognizing that a single person rarely performs an entire public service process, citizen-focused organizations combine customer relationship management (CRM), workflow and Internet technologies to empower government employees as knowledge workers.

Source: Microsoft e-Goverrment Vision

Customer Centric Payoff



Source:
Deloitte Research 2000

Where e-Government Is

- Electronic government, with a few exceptions, has not yet become reality.
- What has been occurring with increased frequency is "government online."
  - Government online consists mainly usually take the form of static, non-interactive Web sites.
  - These ventures are often dubbed "portals" but seldom offer citizens more than an aggregation of agency sites -- each of which remains a silo of agency Web pages.

Source: EzGov

Where e-Government Is

- These Web pages, in turn, typically consist only of general agency information and telephone contact information.
  - The boldest offer a small helping of e-transactional applications, such as tax payment.
  - Even these few software applications, however, are often buried layers deep, requiring a citizen to navigate through the sites of multiple agencies to find the desired application. Most governments have yet to realize the vision of a personalized, citizen-centric, feature-rich government Web presence.

Source: EzGov

Where e-Government Will Be

- A step beyond e-transactional payment applications and a technological leap over a uni-directional, information-only government Web site.
  - As such, the e-government technologies that power such a vision extend considerably further than HTML, JavaScript and other Web page implements common to most current government online initiatives.

Source: EzGov

E-Government Technology: An Analogy

BUILDING A HOUSE	BUILDING E-GOVERNMENT
Points of Access: front door, back door, side door	**Points of Access**: Web, Wireless, Telephony, Kiosk
Rooms: living, dining, bathroom, kitchen...	**Software Applications**: Business License Application, Ticket Payment, Permit Renewal
House "Components:" pre -built trusses, molded showers, pre assembled cabinetry, wiring...	**Software Components**: Payment engine, Workflow, Personalization. e Forums...
Structural Foundation: concrete, plumbing	**Svstem Infrastructure**: message brokering, audit and logging, session management...

e-Government System Infrastructure

- A sound system infrastructure provides many things: session management, systems management (audit and logging), scalability, etc.
- Yet because the e-government space promises considerable change over the next few years, perhaps the most important quality of an e-government system infrastructure is *flexibility*.

e-Government System Infrastructure

- Fortunately, most of the technologies that drive the e-space, such as Java, are predicated on a system of open standards.
  - A system infrastructure based upon open standards ensures a high degree of interoperability between different hardware, software and vendors.
  - If the "foundation" of the system is centered on open standards, it follows that the software components and software applications that run atop this system infrastructure will observe open standards as well. This, in turn, means flexibility -- or, more specifically, the ability to evolve with the electronic government space.

e-Government System Infrastructure

- Security is a major issue
  - Tradeoff between functionality and performance
  - Security Requirements
    - User / Agency Authentication
    - Confidenciality
    - Privacy and Ownership
    - Nonrepudiation
  - Public-key infrastructure
    - Certification authorities
    - Verisign

e-Government Software Components

- E-government software components power the software applications used by citizens, businesses and government employees.
- In addition to the payment engine component, we need…
  - A workflow management engine
  - Personalization
  - Electronic forms
- Well-built software applications may employ one or more e-government software components to achieve desired functionalities with greater flexibility.

e-Government Software Components

- A sound e-government software component exhibits two primary characteristics.
  - First, as with system infrastructure, **it should be developed around "open standards."** An open standard is a published standard that is owned by no one and is used universally.
  - The second primary characteristic of sound software components is that the software component must be **built specifically for the government space**.
    - Attempts to re-purpose software components from the private sector into the government sector may lead to forced-fits and poor feature functionality.

e-Government Software Applications

- It is difficult to predict all the software applications a constituency will demand.
  - It is, however, possible to anticipate the core features that these software applications must offer -- payment processing, digital certificates, electronic forms -- and secure the appropriate software components.
  - If the software applications selected are, like the software components, built on open standards specifically for the e-government space, this will help ensure that the e-government framework can grow and change with constituency demand.

e-Government Software Applications

- Example: The Payment Engine
  - It is an integral component of the overall e-government framework.
  - Provides the payment processing functionality specific to government.
    - Ability to process credit/debit and e-check payments in real-time
    - A reliable, scalable and secure solution that secures data during its transmission and storage
    - Reliable, secure leased-line connections to its acquiring processor
    - A confirmation number for every successful payment

e-Government Software Applications

- Example: The Payment Engine (cont)
  - Online payment tracking
  - Financial reports of all payments
  - Complete audit trail of a transaction through the entire payment cycle
  - Proactive notification to the consumer and government agency of all charge-backs
  - Ability to provide fee-mapping of all interchange, processing or convenience fees to separate bank accounts
  - Transaction splitting -- ability to take one transaction and map to multiple bank accounts

e-Government Application Programming

- HTML Forms
  - Common Gateway Interface (CGI)
    - PERL
  - ASP
    - Under MS platform
- Scripts:
  - To enhance the interactivity and processing
    - JavaScript
    - VBScript
- Java Applets
  - Interactive processing at the client
- Java Servlets

e-Government Application Programming

- XML
  - Adopted by W3C in February 1998
  - Provides a language for describing data in a standard manner
  - Middleware for interoperability among applications will be based on XML
  - Special purpose languages may be used to represent the following:
    - Tabular data
    - EDI
    - Content tagging
    - Wireless Markup Language

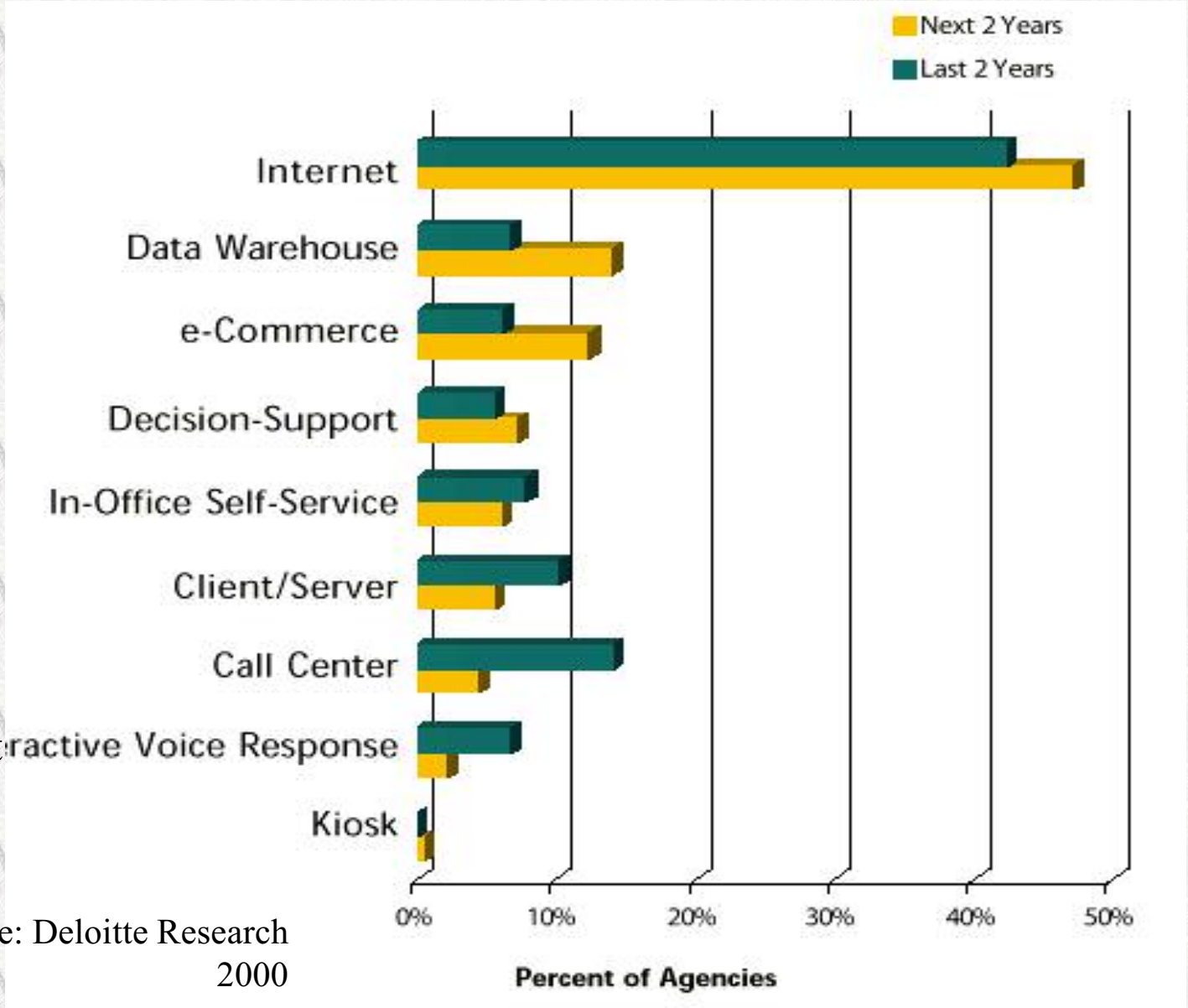
e-Government Points Of Access

- The final important aspect of a sound e-government framework is the point of access: Web, IVR, wireless, kiosk, etc.
- All e-government software applications should be accessible from multiple access points, or "delivery channels."
  - If a citizen pays a property tax bill through a telephony channel such as IVR, they should be able to confirm payment through another delivery channel, such as the Web.

e-Government Points Of Access

- Alternative Technologies for Internet access in Mexico:
  - Analog Modem
  - Basic–rate ISDN
  - DSL
  - Cable Modem
  - Satellite
  - Wireless Data
- Alternative Devices:
  - Computer
  - Cellular phone
  - Handheld
  - Kiosk

What Technologies are being used?



Source: Deloitte Research 2000

What Technologies are being used?

- KPMG conducted a test in the e-Technology Center of the Social Security Administration
- Data was collected during the test, focusing on technical, operational, and customer perspectives.
  - (1) daily focus group discussions with “agents;”
  - (2) “customer” questionnaires and focus groups;
  - (3) Technology Thread self-assessment questionnaires

What Technologies are being used?

- The following technologies and capabilities were distinguished:
  - Natural Language
  - Web Chat
  - Web Collaboration
  - Email
  - Voice over IP
  - Customer History Tracking
  - Routing Technology
  - WhiteBoarding
  - Callback
  - Web-based Security

Critical Success Factors

- The following features characterize organizations that are successfully implementing e-government projects:
- Open and pervasive.
  - online services are based on Internet standards,
  - the knowledge society must be all-inclusive·
- Customer-oriented.
  - put the citizen at the center of their thinking.
  - Citizen Relationship Management systems to provide quality, personalized services.
  - With added value services and two-way information flows, more citizens will be attracted to use online services.

Critical Success Factors

- Services are integrated.
  - business processes cut across all agencies and jurisdictions so government appears online as a completely integrated system.
- Public Private Partnership.
  - Many government organizations lack the in-house expertise and project management skills to undertake major e-government initiatives.
  - Governments may want to explore new procurement models, like partially self-funding models in which contractors are given revenue opportunities through service subscriptions or a share of cost reductions.

Infrastructure is not everything...

- Success will depend in large part on the quality of other elements besides the infrastructure:
  - The **information** itself, which may be in the form of video programming, scientific or business databases, images, sound recordings, library archives, and other media.
  - **Applications and software** that allow users to access, manipulate, organize, and digest the proliferating mass of information that the infrastructure will put at their fingertips.

Infrastructure is not everything...

- The **network standards** and **transmission codes** that facilitate interconnection and interoperation between networks, and ensure the privacy of persons and the security of the information carried, as well as the security and reliability of the networks .
- The **people** - largely in the private sector -- who create the information, develop applications and services, construct the facilities, and train others to tap its potential. Many of these people will be vendors, operators, and service providers working for private industry.

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