Abstract

During the last two years, the technology that employees use to interact has changed dramatically. Technology research groups have coined and use the phrase, “Consumerization of IT” to capture this phenomenon. iPhones, Android Smartphones, iPads and other tablets are flying off the shelves and finding their way into the workplace in a corollary phenomenon referred to as BYOD or Bring-Your-Own-Device.

What does this trend mean to your organizations? Is it a good thing? Will it save you money? Will it cost you money? Will it improve your use of technology to help make your organizations more efficient or more effective? Are there risks involved? Are there legal issues to consider? What should you do first?

This presentation will provide you with useful information and recommendations that you can act upon immediately to begin answering these questions. You will hear what you need to know about the Consumerization of IT and the resultant BYOD explosion.
IPADS, SMARTPHONES, AND TABLETS ... (OH MY!)

THE CONSUMERIZATION OF IT — READY OR NOT, BYOD

PRESENTERS:  
BETH ANN UNGER — IT MANAGER, CITY OF ARLINGTON  
CURT BALOGH — IT DIRECTOR, CITY OF FRISCO  
MELINDA BARLOW — LEGAL COUNSEL, CITY OF ARLINGTON
• What is Consumerization of IT?
• Rapid changes in the marketplace and user expectations
• What is BYOD?
• Opportunities that BYOD provides
• Legal considerations
• Risks to be considered
• Challenges for an IT department
• Recommended course of action
**WHAT IS CONSUMERIZATION OF IT?**

**Consumerization of IT** is the specific impact that consumer-originated technologies can have on enterprises. It reflects how enterprises will be affected by, and can take advantage of, new technologies and models that originate and develop in the consumer space, rather than in the enterprise IT sector. Consumerization is not a strategy or something to be “adopted.” Consumerization can be embraced and it must be dealt with, but it cannot be stopped. Consumerization drives and inspires new enterprise governance models that redefine the split of responsibilities between consumers and providers, among associates in the enterprise (consumers of services from the IT organization) and the IT organization.

...Gartner
IN THE BEGINNING...(Way, way back – almost 30 yrs ago)

Mainframe Computers, Terminals, Desktop Computers

Enterprise

Personal Computers

Consumer

Computing Devices Manufactured for and Targeting the Consumer Market

Computing & Communication Devices Manufactured for and Targeting the Business Enterprise Market
THROUGH THE 80’s....

Computing Devices Manufactured for and Targeting the Consumer Market

Mainframe Computers, Terminals, Desktop Computers, Early Portable ‘Laptops’, Early Cellular Telephones

Personal Computers

Consumer

Enterprise

Computing & Communication Devices Manufactured for and Targeting the Business Enterprise Market
Computing & Communication Devices Manufactured for and Targeting the Consumer Market

Computing & Communication Devices Manufactured for and Targeting the Business Enterprise Market

Early to Mid 90’s...

Mainframe Computers, Terminals, Desktop Computers, Laptops, Early Cell Phones

Personal Computers, Early Cell Phones

Consumer

Enterprise
MID 90’s UNTIL A FEW YEARS AGO....

Consumer

- Personal Computers, Laptops, Cell Phones, PDAs, Smartphones

Enterprise

- Servers, Desktop Computers, Laptops, Mainframe Computers, Terminals, Cell Phones, PDAs, Smartphones

Computing & Communication Devices Manufactured for and Targeting the Consumer Market

Computing & Communication Devices Manufactured for and Targeting the Business Enterprise Market
Overlap mostly confined to use of personal cell phone for work calls and email, outlook calendaring access, plus personal laptops and desktops accessing email, contacts and calendaring functions using OWA (Outlook Web Access)
Approximately 200 different smartphones have been released in the US since 2009.

At 2011 CES: 60 new and distinct tablets were introduced by over 20 different manufacturers including: Acer, Asus, Dell, Fujitsu, LG, Motorola, Panasonic, Samsung and others. Nearly 2/3 were Android OS and approx. 1/3 were Windows OS.

Apple does not attend CES.

The iPad was introduced in April 2010. It took Apple 22 years to sell 55 million Macs. ...5 years to sell 55 million iPods. ...3 years to sell 55 million iPhones. Apple sold 55 million iPads in its first 12 months.

Smartphone Manufacturers:
- Samsung
- LG
- Apple
- Motorola
- HTC
- Nokia

Smartphone Operating Systems:
- Google Android
- Apple IOS
- RIM/Blackberry OS
- Microsoft Windows
- Symbian
Consumer Targeted Technology:
- iPads, Tablets, Smartphones,
- Personal Computers, Laptops,
- Notebooks, Public Internet, Open
  Wifi Networks

Enterprise Targeted Technology:
- Desktops, Laptops, Servers,
- Blackberries, Select
  Smartphones, Private Networks
The rise of social media as a business application

The blurring of work and home

The emergence of new mobile devices

Shifting business models require tech-savvy employees

Employee expectations of IT organization are changing
WHY IS CONSUMERIZATION OF IT HAPPENING SO FAST?

• Endless variety and choice
• Almost zero barrier to acquire
• Low cost, approaching free
• More advanced and innovative
• Easiest to use
“For the new generation of knowledge workers, entering the workplace often feels like entering a computer science museum.”

R. Wang, “Coming to Terms with the Consumerization of IT,” Harvard Business Review

The editors at Information Week tell us: “Consumerization is a parade. You can either get out in front of it to stop it and get trampled, or you can grab the baton and lead the parade.”
Overlap growing rapidly. Use of personal smartphone for work calls and email, outlook calendaring access, plus personal laptops and desktops accessing email, contacts and calendaring functions using OWA (Outlook Web Access). Some are seeking and gaining secure access for enterprise applications and files. This overlap is the start of BYOD.
WHAT IS BYOD?

Bring your own device (BYOD) is an alternative strategy allowing employees, business partners and other users to use a personally selected and purchased client device to execute enterprise applications and access data.

...Gartner
THE “ADVERTISED” PROS OF BYOD

Potential Cost Saving – employee-owned devices can reduce or even eliminate the company’s cost for mobile devices and service plans.

Worker Satisfaction – employees are happier and work more using devices they like.
THE “ADVERTISED” PROS OF BYOD

Employee Productivity – research suggests that workers who use their own devices tend to work more hours and more productively.

Newer Technology – employees tend to upgrade devices more often than companies, making the latest features and capabilities available.
### SOME BYOD SURVEY STATS

<table>
<thead>
<tr>
<th>Stat</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>74% of companies allow BYOD usage in some fashion</td>
<td>Symantec State of Mobile Computing Survey 1/2012</td>
</tr>
<tr>
<td>81% of employed adults use at least one personally owned electronic device for business use</td>
<td>Harris Interactive Survey 2/2012</td>
</tr>
<tr>
<td>31% connect to organization via free or public Wi-Fi</td>
<td>Bradford Networks 2011</td>
</tr>
<tr>
<td>Top 3 apps on personal devices: Social Networks, cloud based email, instant messaging</td>
<td>Cisco IBSG Horizons Study 5/2012</td>
</tr>
<tr>
<td>71% of businesses that allow BYOD, have no specific policies and procedures to support BYOD deployment and ensure security</td>
<td>KnowB4 Research Study 9/2012</td>
</tr>
</tbody>
</table>
34% of users store work email passwords on their phones

<10% of organizations are ‘fully aware’ of devices accessing their network

46% let someone else use their personal device

90% of users have disabled ‘auto-lock’ for tablets, 75% for smartphones

68% report they lack the necessary tools to support employee personal devices, regardless of whether policies are in place or not

---

1 Motorola Mobility Survey 2012
2 Sans Annual Mobile Security Survey 4/2012
3 Bradford Networks 2011
4 Harris Interactive Survey 2/2012
5 Dimensional Research Study 2011
Security – Without control of the devices, applications and usage on its network, an organization cannot ensure the security of its data and systems.

Cost Savings – on the surface it looks good, but when you consider the indirect and hidden costs, savings may not be realized. In one study, the Aberdeen Group found that BYOD costs organizations 33% more, on average, than a company-owned policy.
THE “NOT SO ADVERTISED” CONS OF BYOD

Usage Policies – it is difficult for an organization to tell its employees what is acceptable usage of their own devices.

Data Protection – maintaining control of data that resides on employee-owned devices is nearly impossible.
THE “NOT SO ADVERTISED” CONS OF BYOD

Compliance – compliance regulations, such as HIPAA, PCI, CJIS, and annual financial audits, can be much harder to meet when an organization does not own the devices its employees use.

HR Issues – no access to employees’ devices, invoices and calling records makes it more difficult to monitor work activities, policy compliance and other behaviors.
LEGAL CONSIDERATIONS

- Public vs. Private Information
- E-Discovery and Freedom of Information Act (FOIA)
- Fair Labor Standards Act (FLSA)
- Open Meetings Act
- Employee Privacy
- Policy
Enterprise Targeted Technology:
Desktops, Laptops, Servers, Blackberries, Select Smartphones, Private Networks

Consumer Targeted Technology:
iPads, Tablets, Smartphones, Personal Computers, Laptops, Notebooks, Public Internet, Open Wifi Networks
The View Through IT’s Looking Glass

Consumer Targeted Technology: iPads, Tablets, Smartphones, Personal Computers, Laptops, Social Media, Unvetted ‘apps’, Public Internet, Open Wifi Networks

Traditional Enterprise Targeted Technology: Desktops, Laptops, Toughbooks, Some Tablets, Smartphones, Blackberries, Private Networks
WHY MIGHT IT SAY “WAIT A MINUTE” OR “SLOW DOWN” OR... “NO”?

For years IT has been organizationally and strategically supported and even encouraged to say no.
WHY MIGHT IT SAY “WAIT A MINUTE” OR “SLOW DOWN” OR... “NO”?

We’ve focused on HIPAA compliance, PCI compliance, CJIS compliance, general audit compliance, security policies and procedures, access control, application effectiveness, version control, implementations of upgrades.
We’ve implemented filtering appliances or services to prevent employees from accessing web sites that would be embarrassing to our organizations or that would generally result in a waste of employee work time and tax dollars.
We’ve created and manage email/record/document storage to make sure information can be retrieved for a Public Information Request...even if the employee has deleted the information.
We’ve created private, secured, internal networks to protect information of all types from a constant barrage from hackers, virus and malware creators, phishing expeditions and general nuisance makers…and the unknown next threat.
We’ve insisted that our employees get the least expensive computer that will ‘do the job’ and we’ve further attempted to manage those devices and extended their stay in our work places long past their intended useful life.
We manage expectation of no delays or disruptions in service using in some cases old or patched together equipment and networks that weren’t originally built with today’s network speeds and capacities and security requirements in mind.
This is what IT has the responsibility to create and maintain regarding your organization’s "data".
Approximately 200 different smartphones have been released in the US since 2009.

At 2011 CES: 60 new and distinct tablets were introduced by over 20 different manufacturers including: Acer, Asus, Dell, Fujitsu, LG, Motorola, Panasonic, Samsung and others. Nearly 2/3 were Android OS and approx. 1/3 were Windows OS.

Apple does not attend CES.

The iPad was introduced in April 2010. It took Apple 22 years to sell 55 million Macs. …5 years to sell 55 million iPods. …3 years to sell 55 million iPhones. Apple sold 55 million iPads in its first 12 months.
Android Operating System Update Versions Since 2009

- **Cupcake**
  - Android 1.5
  - 4’/09

- **Donut**
  - Android 1.6
  - 9’/09

- **Eclair**
  - Android 2.0/2.1
  - 10’/09

- **Froyo**
  - Android 2.2.x
  - 5’/10

- **Gingerbread**
  - Android 2.3.x
  - 12’/10

- **Honeycomb**
  - Android 3.x
  - 2’/11

- **JellyBean**
  - Android 4.1.x
  - 6’/12

- **Ice Cream Sandwich**
  - Android 4.0.x
  - 10’/11

- **Gingerbread**
  - Android 2.3.x
  - 12’/10
Employees and Citizens want to use the cool, inexpensive, rapidly changing, easy to use, ‘good’ technology outside the enterprise.

Unlike hardware, operating systems and applications of the past, where users and IT get a chance to research and get trained on features and functionality before implementing...device manufacturers keep their new devices a secret until a grand unveiling.

Consumerization of IT is not going away; user expectations will increase and new devices, with new features and applications will continue to be unveiled at breakneck speeds.

Most likely your organization currently lacks the tools, (hardware, software, training) to manage employee provided and/or employee owned devices.
Our organizations have invested in desktops, laptops, cell phones, radios, networks, applications, systems, standardized processes and training and none of us want to throw that investment away.

Chances are you don’t have a documented, or even a discussed and agreed upon, strategy of how to handle personally owned devices in the enterprise.

You most likely have an IT department that is security sensitized, resource constrained, under trained and focused on doing whatever they can to keep your perpetually aging infrastructure, computers and applications updated and running.

Most likely your computer and communications policies are out of date or don’t completely address the use of personal devices in the workplace.
Discuss, determine, document your strategy for BYOD. All devices accepted, only ‘approved’ devices accepted, employee owned, employee subsidized, etc?

Establish Policies & Processes - Multiple departments must be involved (HR, Finance, Legal, IT)

Fund and Implement Technology Management Solutions – These include having appropriate MDM (Mobile Device Management) or MAM (Mobile Application Management), Network Access, Security and Application Access solutions

Establish an on-going support model – Will the user or IT have prime responsibility for end device problems and resolution?

Publish your strategy, policies, processes and train employees

Start on-boarding users.
So if further consumerization of IT is inevitable, why not jump right in to BYOD?

Perhaps the answer is the age-old adage: “If it looks too good to be true, it probably is.” BYOD may be right for some, but the security concerns, compliance issues and other pitfalls are very real and it isn’t yet known whether exaggerated cost savings claims will hold up over time. Making an informed decision will require input from many and careful consideration. You have homework to do. The good news is it can be collaborative homework. Engage your IT professionals and start the conversation as soon as you can.

Thank you for your time. Any Questions?
Texas Association of Governmental Information Technology Managers

• TAGITM has 257 agency members representing 154 agency’s statewide.
• Our mission is to support government technology professionals by providing education, collaboration and leadership opportunities that promote innovation and services.
Membership benefits include:

– Invitation to participate in the Annual Conference and Regional Meetings
– Access to the TAGITM website Forums
– Access to the TAGITM Listserv to discuss/share information
– Access to the TAGITM website Document Repository which includes sample RFPs, Policies and Procedures and other documents
– Subscription to the TAGITM Newsletter
– Access to other Agency & member contact information
Membership

- Membership fees are $100 per agency per year, which includes one voting member and unlimited additional agency representatives.