

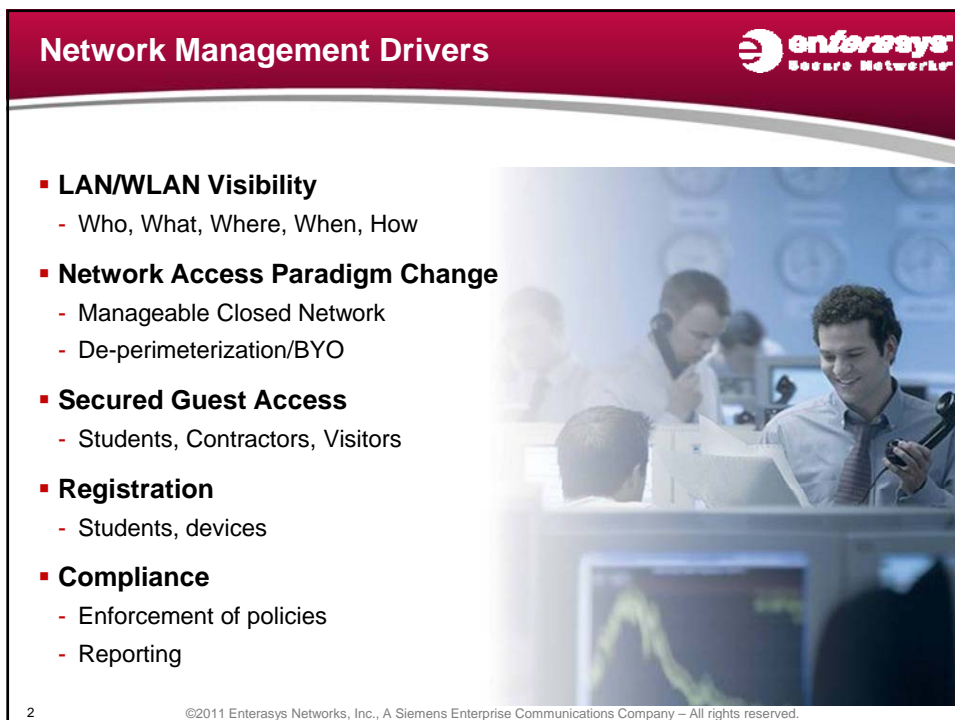


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Secure Networks

*"There is nothing more important than our customers"*

**Visibility and Control Solutions**  
Dealing with the challenge of BYO

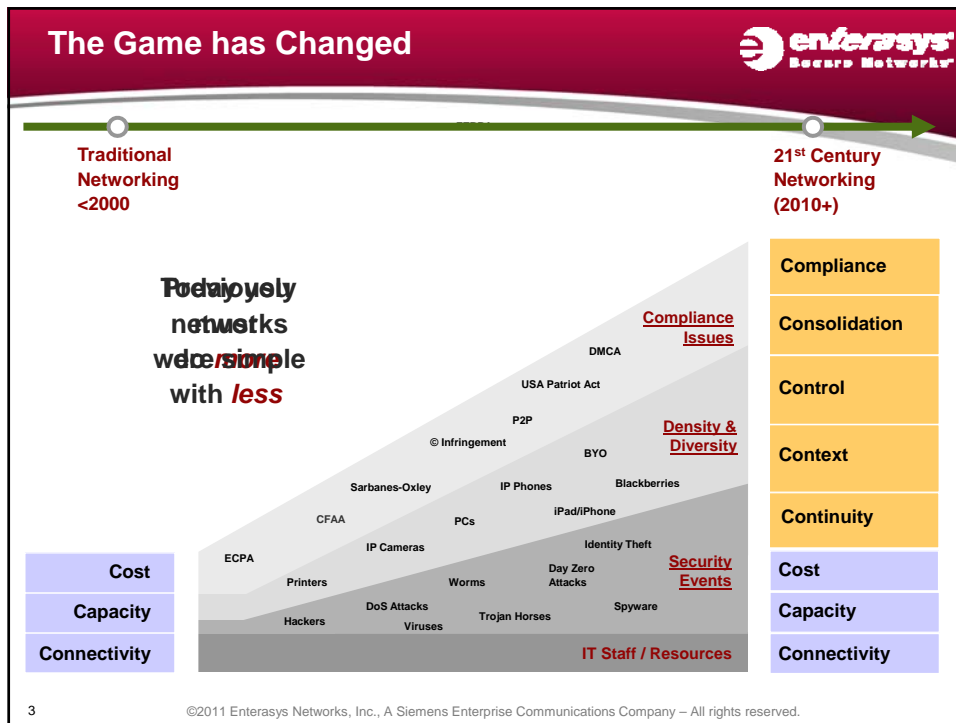
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**Network Management Drivers**

- **LAN/WLAN Visibility**
  - Who, What, Where, When, How
- **Network Access Paradigm Change**
  - Manageable Closed Network
  - De-perimeterization/BYO
- **Secured Guest Access**
  - Students, Contractors, Visitors
- **Registration**
  - Students, devices
- **Compliance**
  - Enforcement of policies
  - Reporting

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## Access Layer Concerns

### Limited Visibility at the Access Layer

- The devices connected to the network
  - Users
  - Headless IP devices
- Location of each device – switch, port, AP, SSID
  - Trusted area
  - Restricted area
- The access controls applied to each device user
  - IP Phone role
  - Enterprise user – IT, Faculty, HR, etc
  - Guest
  - Restricted Contractor
  - Quarantine
- Security state


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## Application Layer Concerns




### Limited Visibility at the Application Layer

- The devices connected to the network
  - What is using the bandwidth?
  - Which device is running prohibited applications?
  
- Mapping of Device IP address to User
  - Source IP address is of limited value
  - Switch Port to MAC to IP to Username mapping



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## De-perimeterization and BYO in Education



- **Security and compliance mandates require “Least Privilege”**
  - Fundamental dichotomy given nature of Universities
  - Give access to a wider range of users
  - Give them more access to more services
  - Allow wider range of devices access - BYO
  - Threats are more likely inside the firewall
  
- **Collaboration orientated architecture in Higher Education**
  - Secured, controlled granting of access to quasi-affiliated entities demands;
    - Authentication
    - Risk Assessment
    - Systemic enforcement to be network vendor agnostic
  
  - EDUROAM
    - Just Internet
    - How about greater collaboration?


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## Effects of BYO devices

- **3 people are using P2P software**
  - Bittorrent & eDonkey2000 used
  - 250 different peers connected to

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**CCA-EDUCAUSE**  
AUSTRALASIA 2011  
Darling Harbour 3 – 6 April 2011

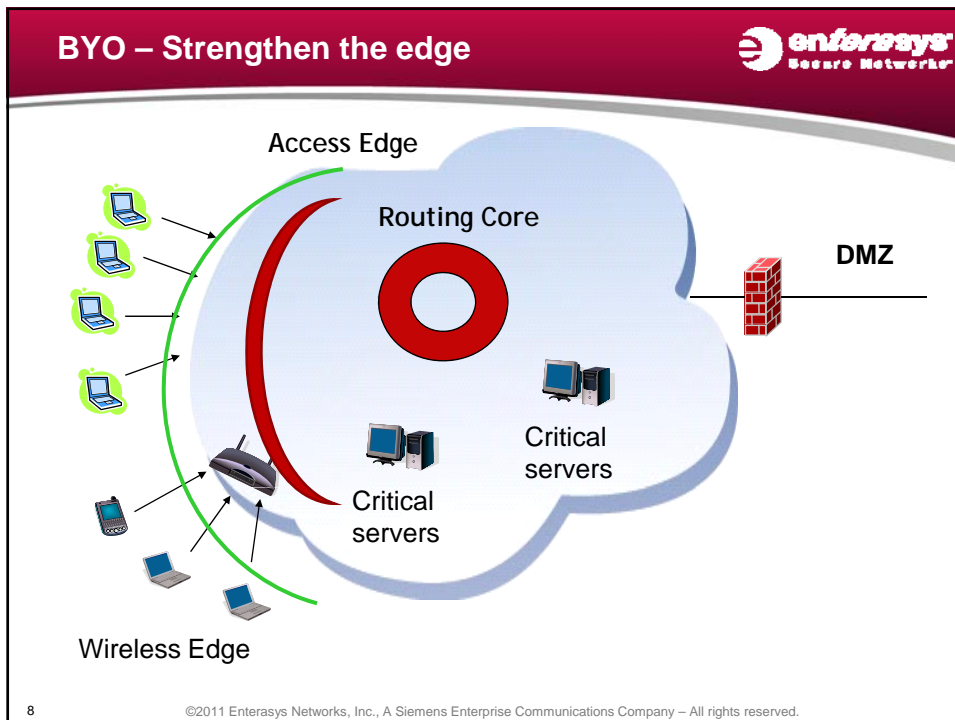


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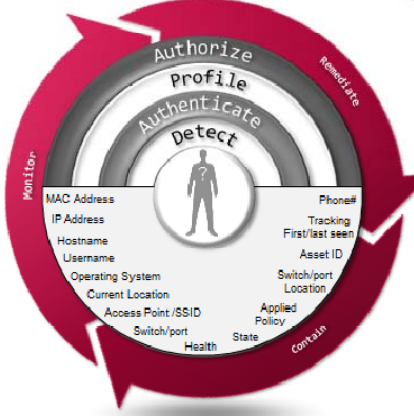
- **Bandwidth used by Skype**
  - 122 sources have consumed 445Mbps of data
- **Where is this network?**

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## Comprehensive Visibility


- **Ensure health and compliance both prior to and after allowing access**
  - Agent and agent-less assessment
  - Integration with other security technologies
- **Provide appropriate access (to assets and QoS) based on organizational role, authenticated identity and security posture**
  - MAC, IP, Hostname, Kerberos, Web, 802.1x -based authentication
  - Policy, VLAN or ACL enforcement
- **Support guest access, sponsored access and end-system / user tracking**
  - IP to ID mapping: track username, IP, MAC, location, etc.
- **Automatically contain detected threats**
  - Quarantine role
  - Assisted remediation
  - Automatic remediation



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## Device Profiling

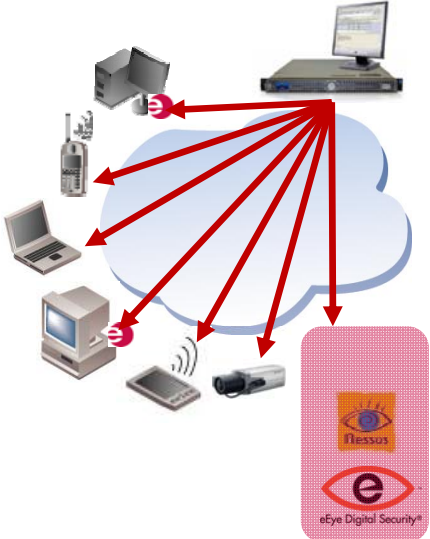
- **Automated profiling and device type detection**
  - Can detect new devices on the infrastructure automatically and profiles them to determine the type of device
  - Automated policy assignment is possible
  - Various sources such as
    - network and agent based assessment
    - DHCP OS fingerprinting
    - captive portal (used for remediation and registration, guest services)
    - and external profilers (via Netflow, IDS Signatures) can be used.
  - The Device type can be an Operating System Family, Operating System or Hardware Type, for example, Windows, Windows 7, Debian 3.0, HP Printer, iPhone, iPad etc.



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## Assessment – In-depth Visibility and Control

- **Agent-less Assessment**
  - Network based scanning
  - CSV scoring
  - Out-of-box scanning configurations as well as customized configurations
  - Supports multiple OSs
  - Examples:
    - Anti-virus
    - Patches/OS versions
    - Applications
- **Agent-based Assessment**
  - Permanent or dissolvable
  - Examples:
    - Anti-virus (installed, active, up to date, etc.)
    - Firewalls (installed, active, etc.)
    - Services Running
    - Patches/OS versions (automatic patching enabled, up to date, hot fixes enabled, etc.)
    - Applications (installed, active)
    - Registry Keys



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## Staged Deployment – Big Changes, Zero Risk



- **The biggest roadblock to changing network access posture is fear that it will impede connectivity**
- **Staged Deployment**
  - Allows full control over infrastructure changes during deployment
  - Minimizes impact to business processes
  - Deploy each function without enforcement
  - Verify results before enabling enforcement

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## Interoperability



Implementation for any network without network upgrades

Standards-based - integrates with network equipment supporting RFC3580, VLANs and authentication


Network-based appliance allows integration with any network edge regardless of standards support





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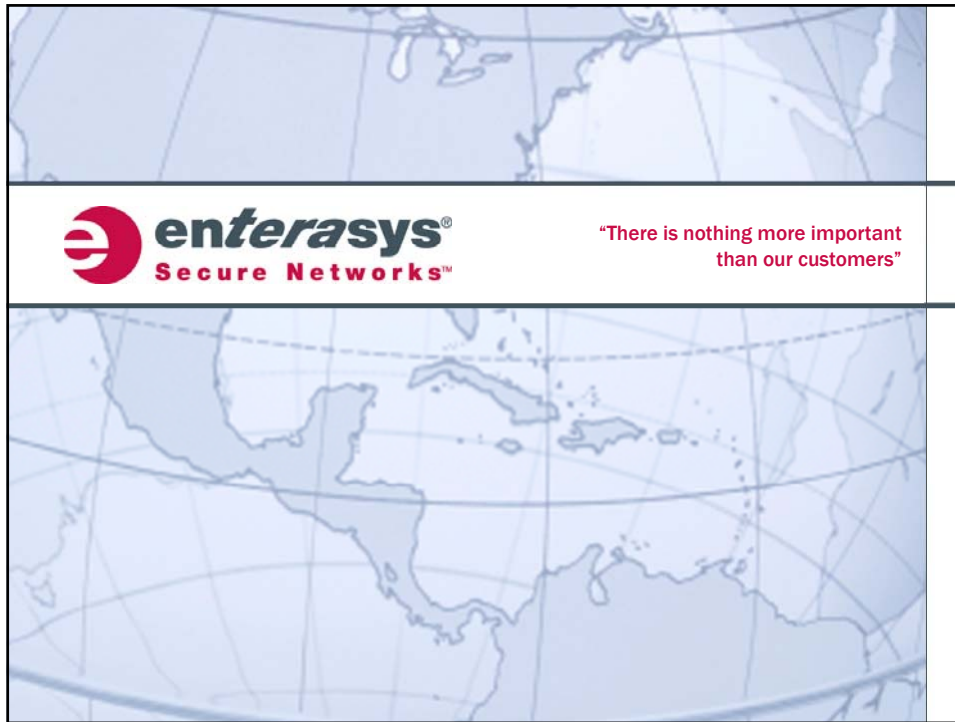
## Enterasys Advantage – Education

*Driving Efficiency and Improving the Learning Experience*



<ul style="list-style-type: none"> <li>▪ Enable open anytime, anywhere access enhancing academic collaboration</li> <li>▪ Provide easy network access for a multitude of networked devices</li> </ul>	<div style="background-color: #4a7ebb; color: white; padding: 10px; text-align: center;"> <b>Student Advantage</b> </div>		<div style="background-color: #800000; color: white; padding: 10px; text-align: center;"> <b>Faculty Advantage</b> </div>	<ul style="list-style-type: none"> <li>▪ Leverage technology in the classroom to achieve learning objectives and minimize distraction</li> <li>▪ Enable consistent anytime, anywhere access to resources</li> </ul>
<ul style="list-style-type: none"> <li>▪ Support open access with detailed visibility, user accountability &amp; control</li> <li>▪ Automate &amp; simplify student device registration, centralize compliance reporting &amp; enable virtualization initiatives</li> </ul>	<div style="background-color: #00b050; color: white; padding: 10px; text-align: center;"> <b>Organizational Advantage</b> </div>		<div style="background-color: #444444; color: white; padding: 10px; text-align: center;"> <b>Operational Advantage</b> </div>	<ul style="list-style-type: none"> <li>▪ Deliver industry-best TCO while supporting cutting edge learning tools</li> <li>▪ Lower operational costs while delivering campus wide mobility, resiliency and security</li> </ul>

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