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Cyberspace: A Fragile Ecosystem

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Creating an Information Advantage 1



Dependence on Cyberspace

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Creating an Information Advantage

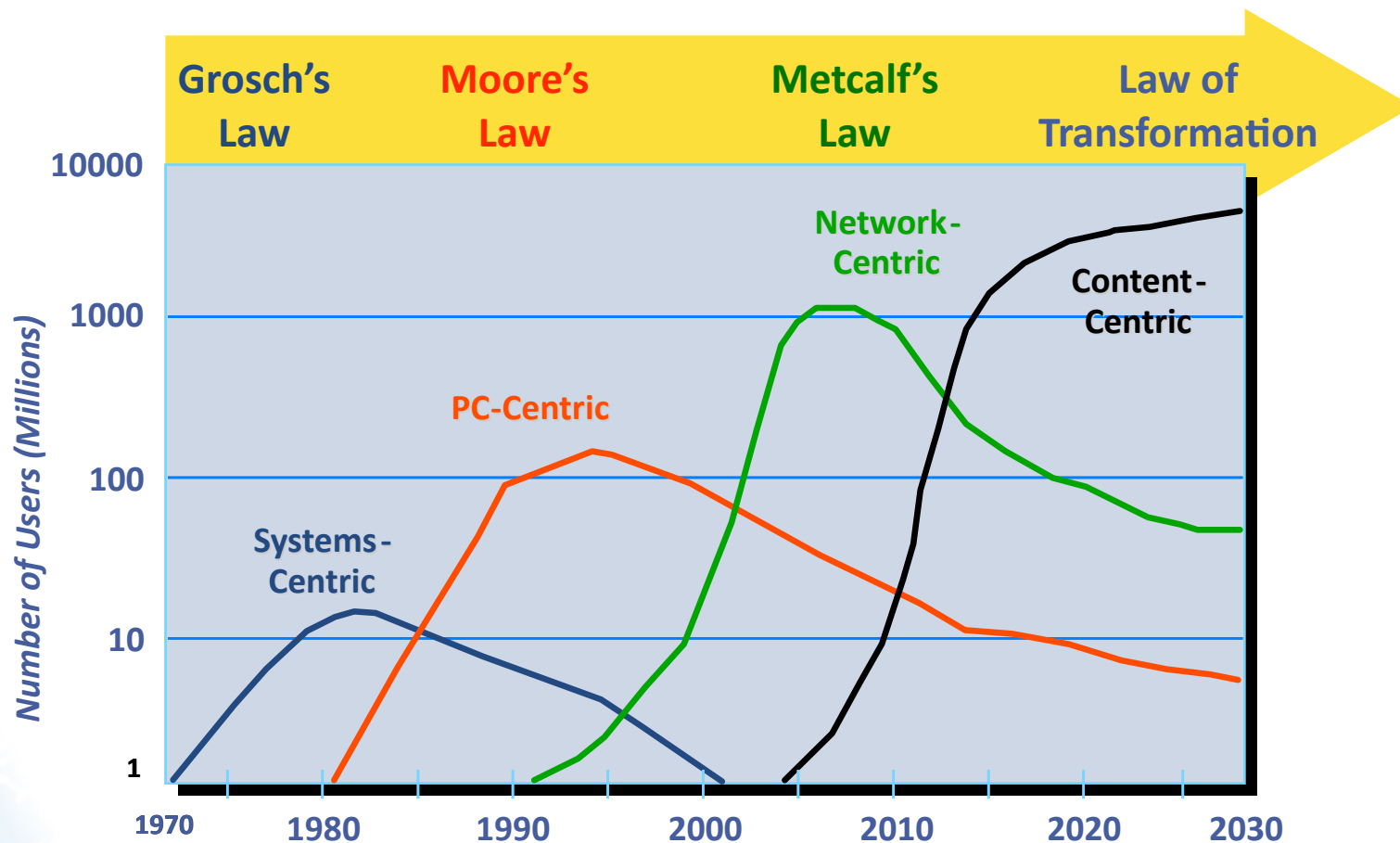
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Looking Ahead ... Looking Back

Waves of IT Industry Growth in the Information Age



Source: David Moschella, "Waves of Power", 1997

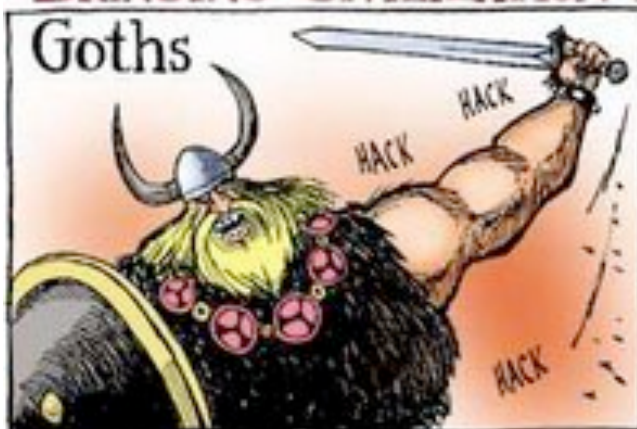
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Looking Ahead ... Looking Back (alternate story)

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BRINGING CIVILIZATION TO ITS KNEES...





Paradigm Shift

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Are you a Starfish or a Spider?

■ Starfish

- Peered
- Adaptive
- Resilient



■ Spider

- Hierarchical
- Resists Change
- Fragile





Cyber Risk Management

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Cyber



Time & Environment

Information



Content & Services

Identity



**Individuals, Organizations,
Equipment**

Balancing Operational Needs against Security

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Vignette: The Recapture of Fallujah



Green Bridge





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Vignette: World War II Cryptography



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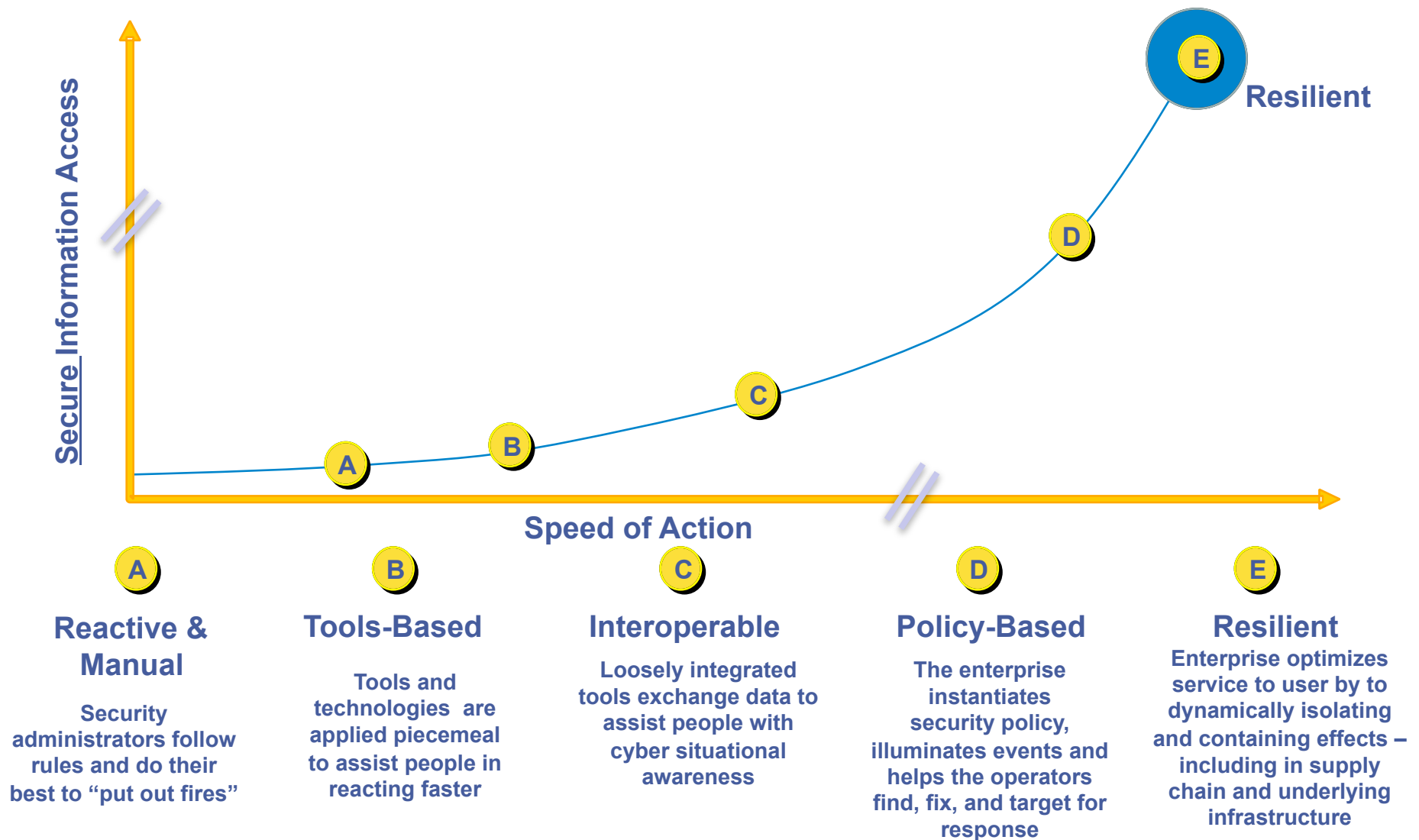
Shift in Strategic Focus

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FROM	TO
<ul style="list-style-type: none">• Protect Information	<ul style="list-style-type: none">• Ensure Operational Success
<ul style="list-style-type: none">• Static Pre-Placed Defenses	<ul style="list-style-type: none">• Dynamic Network and Information Operations
<ul style="list-style-type: none">• Proprietary Point Solutions	<ul style="list-style-type: none">• Policy-Based Enterprise
<ul style="list-style-type: none">• People Intensive	<ul style="list-style-type: none">• Integrated Services
<ul style="list-style-type: none">• Fragile Information Technology	<ul style="list-style-type: none">• Resilient Cyber Ecosystem

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Toward a Resilient Cyber Ecosystem





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Trends, Challenges, and Opportunities

- **Strengthen Network Underpinnings**
- **Assure Software & Systems**
- **Managing Attack Surfaces**
- **Reducing Anonymity**
- **Improving Cyber Awareness**
- **Automating Security Content**
- **Mission Based Architectures**

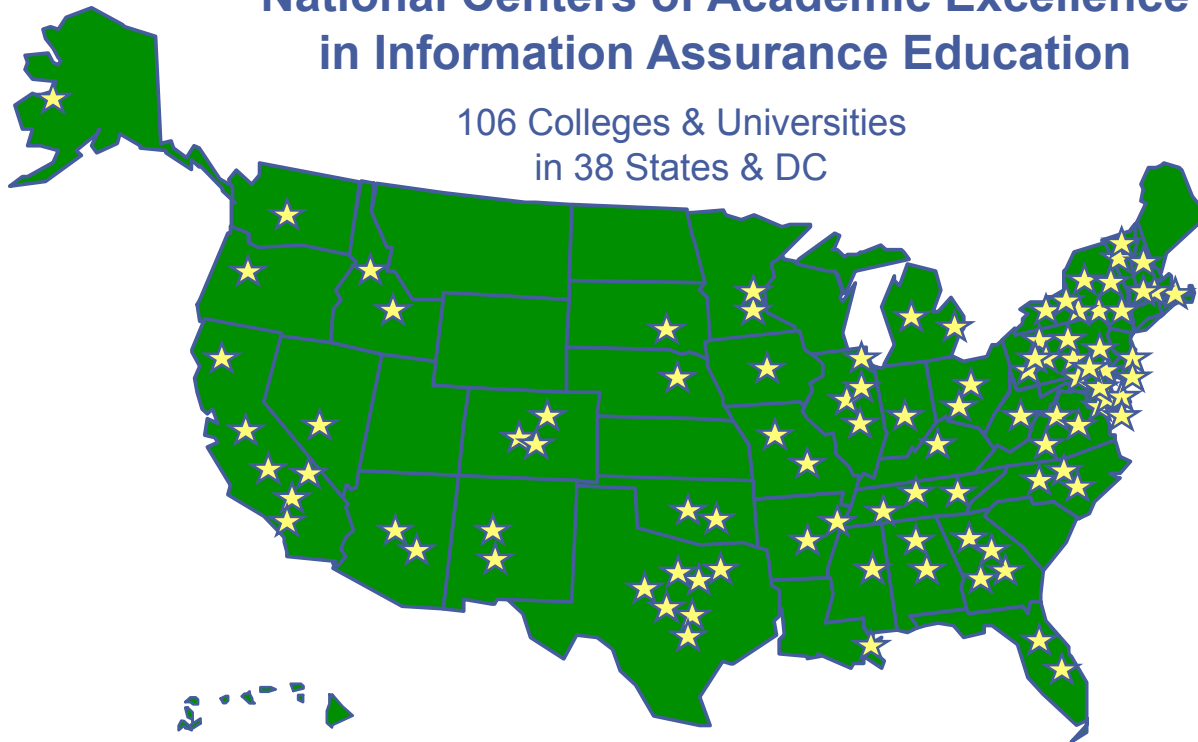
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It's not just about technology . . .

National Centers of Academic Excellence in Information Assurance Education

106 Colleges & Universities
in 38 States & DC



*The US Cyber Challenge – discover, train and
recruit the best talent in the country*

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Culture Change for Cyberspace ...

