Moving from Virtualization to the Cloud: Considerations and Lessons Learned-VMC on AWS

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TCNJ Background

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- Located in Ewing, NJ on 289 tree-lined acres
- Highly selective and recognized as one of the top comprehensive colleges in the nation
- 7,340 students primarily undergraduates across seven schools

TCNJ Information Technology

- Sharon Blanton, PhD is our CIO/VP for IT and Campus Safety

- +- 55 staff members across four IT divisions:
    - Enterprise Applications
    - Enterprise Infrastructure
    - IT Business and Finance
    - User Support Services

- Enterprise Infrastructure
    - Servers
    - Networking
    - Telecom
    - "We make IT work"

IT Alignment with College Strategic Goals

- **Priority IV: Build, operate, and maintain a safe, sustainable, and accessible physical and technological infrastructure that supports high-caliber learning.**

- Information technology and facilities undergird the primary educational mission of the College. Creating an optimized, secure technology infrastructure capable of supporting high caliber learning and developing an attainable plan to provide for our physical spaces will allow TCNJ to continue to provide an exceptional educational experience in and out of the classroom. This commitment to an exceptional educational experience requires that we not saddle our future colleagues with unmanageable deferred maintenance.

- Goal 2: Anticipate, prioritize, coordinate, and address the instructional, administrative and residential technology needs of the college.

- Action Steps:

- Item 2. Improve the communications and feedback loop between the campus community and the Information Technology division.

- Item 4. Create a fully wireless, "bring-your-own-device"-ready campus.

- Item 6. Increase interoperability of IT systems.

Enterprise Infrastructure Role in Goals

- Evaluate current Trends and Initiatives already in progress
- Create a core infrastructure foundation to build upon
  - Ubiquitous wireless access for all that was easy to use
  - Server Virtualization and Consolidation
  - Network Infrastructure Upgrade
  - Security Access Control and Cameras
  - Construction and Renovation

- Ultimate goal is to provide 'Anywhere, Anytime, Any Device' access to TCNJ resources

Cloud First Approach

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- Any new project or initiative is viewed from a 'cloud-first' perspective
- Is there a cloud option and is that option viable and cost effective?
- If not, then on premise solution must be virtual server compatible

Scalable, Agile and Nimble

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- All projects moving forward will be viewed by three guiding questions:
  - **Scalable** - Can the solution/project scale up or down to serve the strategic goals of the College?
  - **Agile** - Do we have resources in place (human or technical) to pivot on short notice of a change in scope or direction?
  - **Nimble** - Can we move in a different direction as needed by ever evolving technology trends and innovations?

A Decade of Virtualization

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- Bare metal boxes to virtualization
- Currently have two VMWare ESX clusters with over 300 servers
- It just works

Storage Up….Costs Down
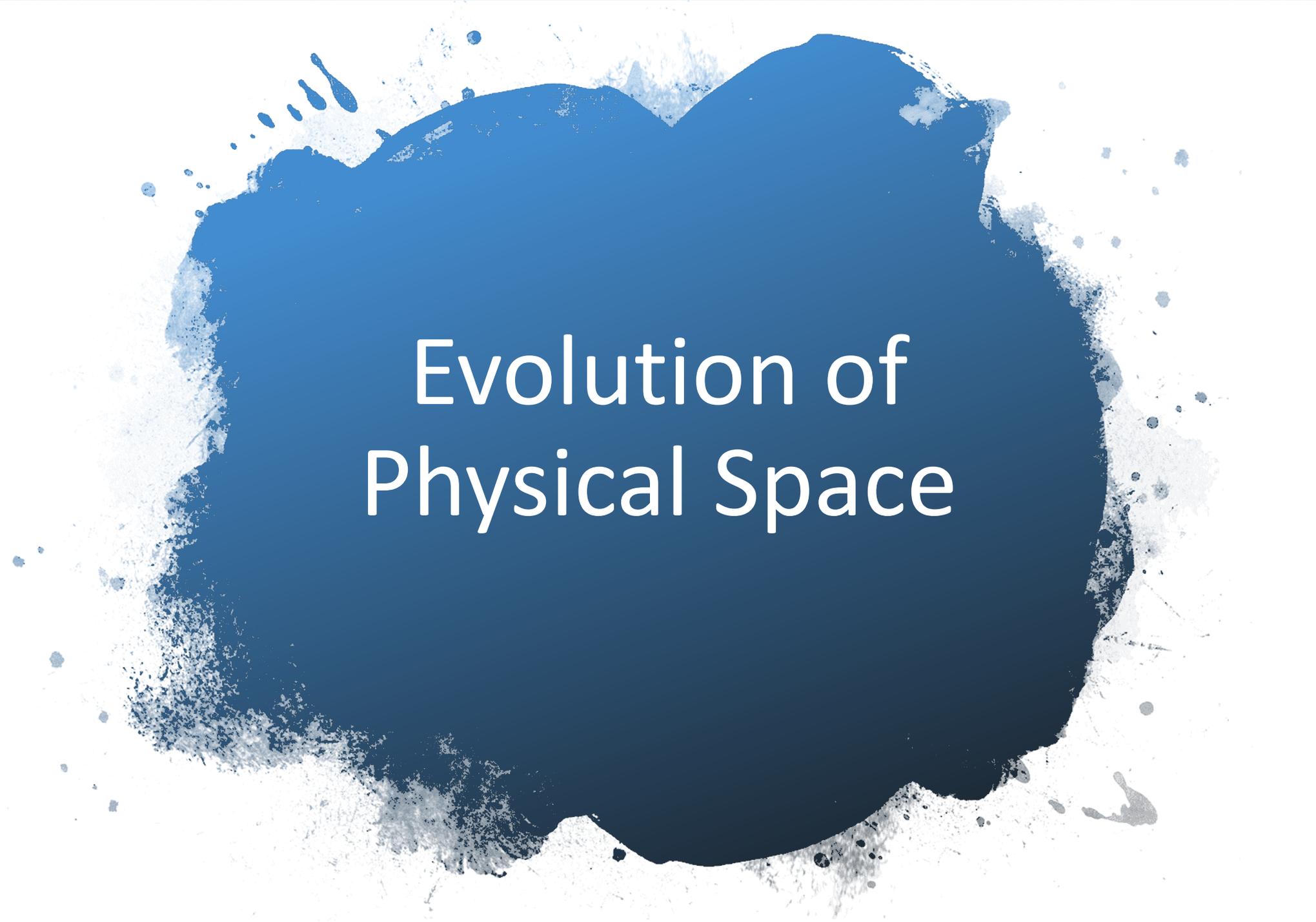
Evolution of Physical Space
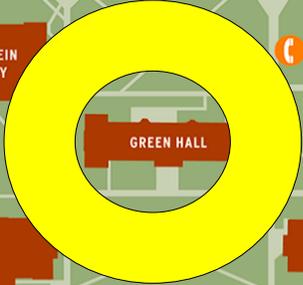
Evolution of Concept and Space

Green Hall

Cromwell Hall
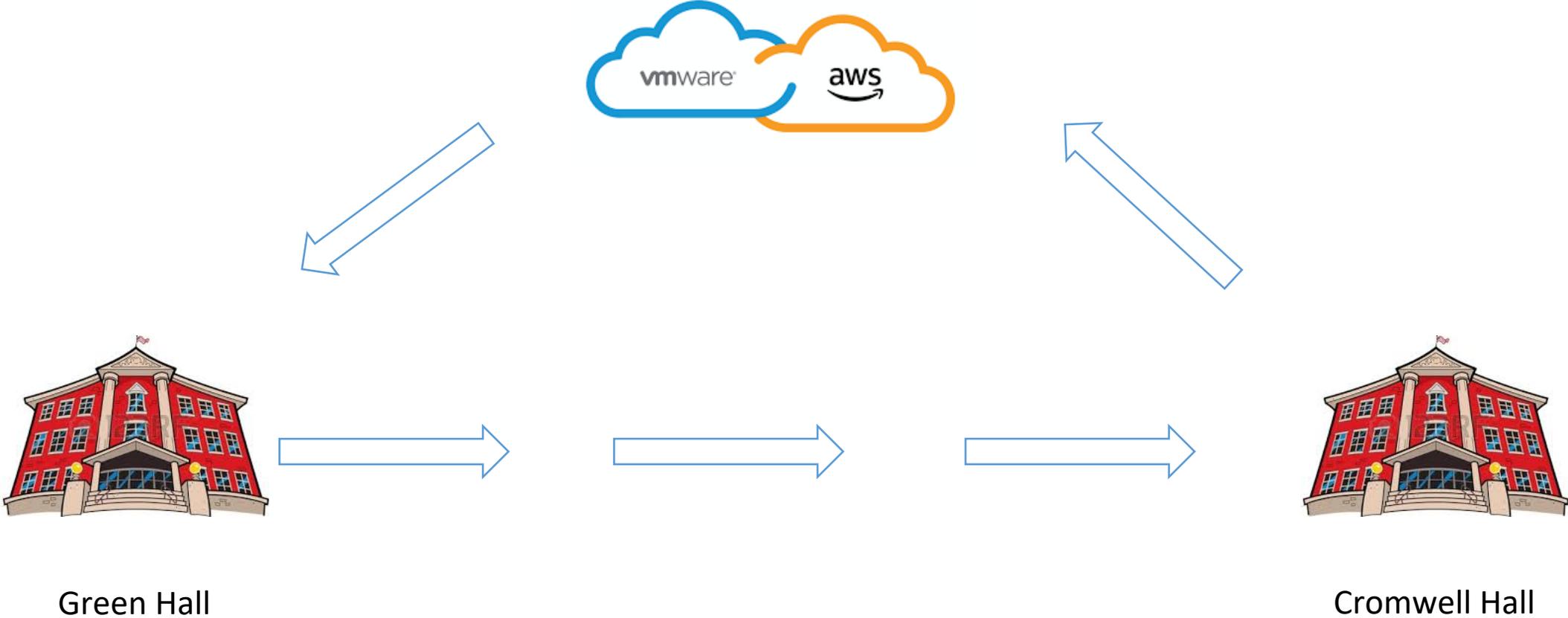
- The speed at which cloud solutions are evolving is staggering

- We started this only a year ago

- It is (and will be getting) easier and easier to move from one solution to another

Resources We Used to Make This Decision

- Cloud Chomp - https://www.cloudchomp.com/
- VMWare TAM for NJEdge – Julian Salinas
- Multiple Meetings with AWS, VMWare, Google Cloud, Azure

Thanks for Attending

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