

Understanding the Impact of Edge Computing in the United States

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**“Having a Mind to Work,
and a Heart for People”**



**Associate Dean Academic Affairs/Workforce
Technology**

**Dr. Gregory Newman
October 30, 2020**

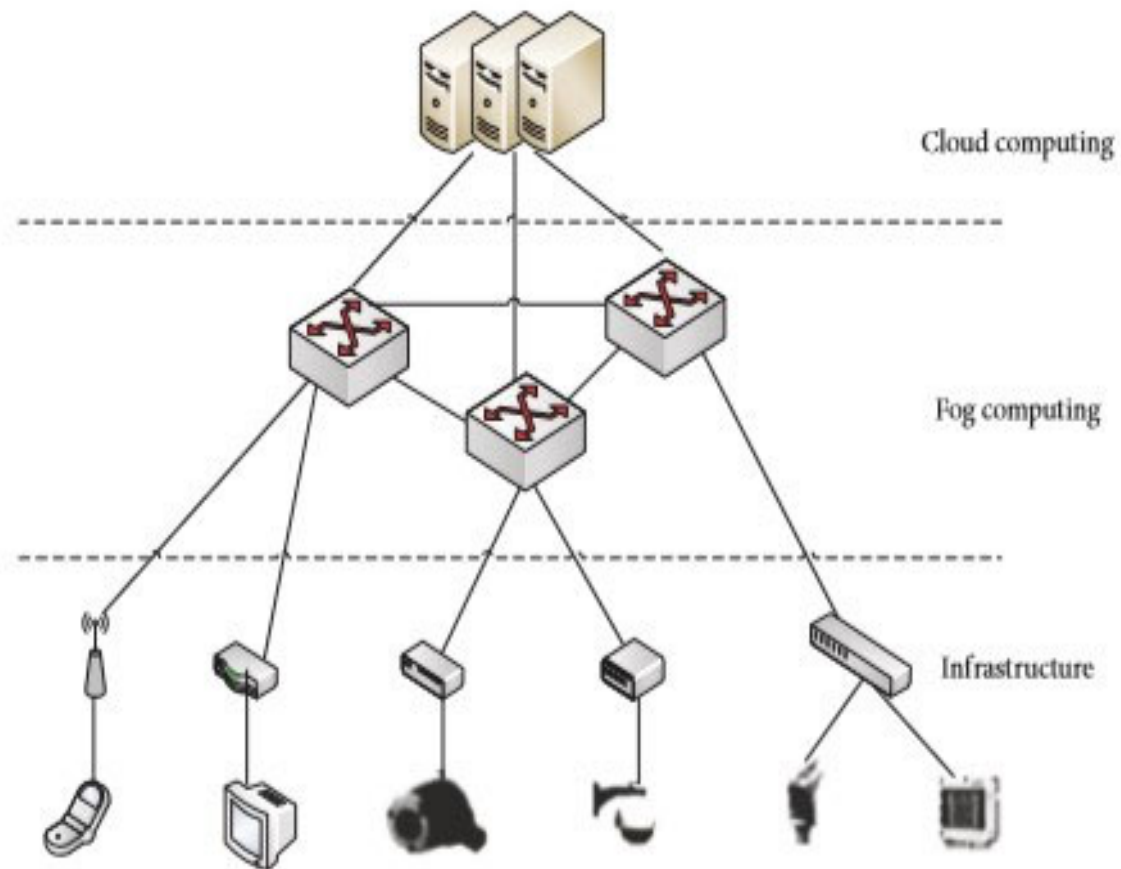
2/12/2021

Presentation Agenda

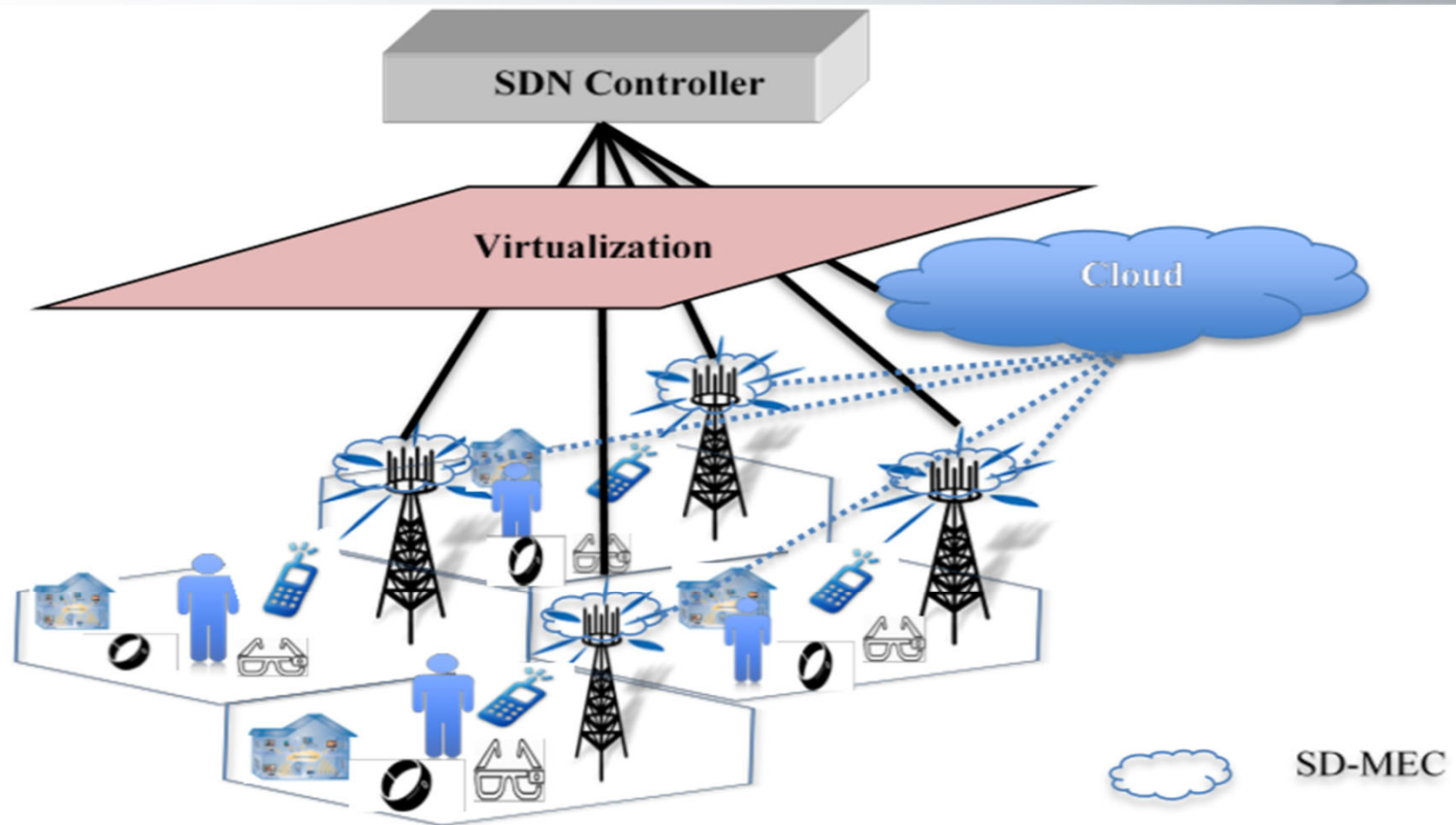


- Introduction
- Market Drivers
- Business Value
- Mobile Edge Computing Service Scenarios
- Deployment Scenarios
- Deployment: Hybrid Edge-Cloud Architecture
- Data Center Deployment Example
- Conclusion

Introduction



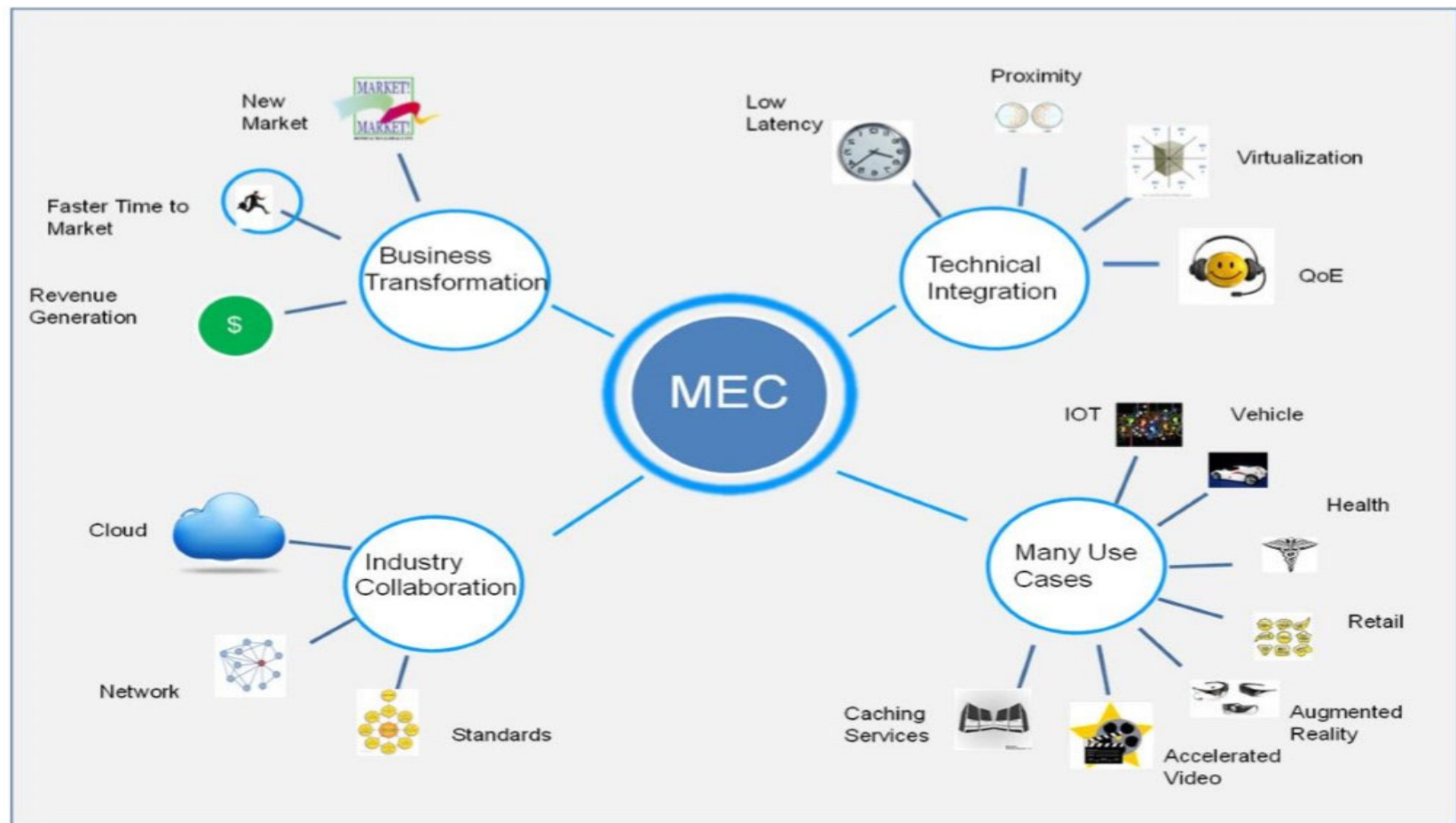
Introduction - continue



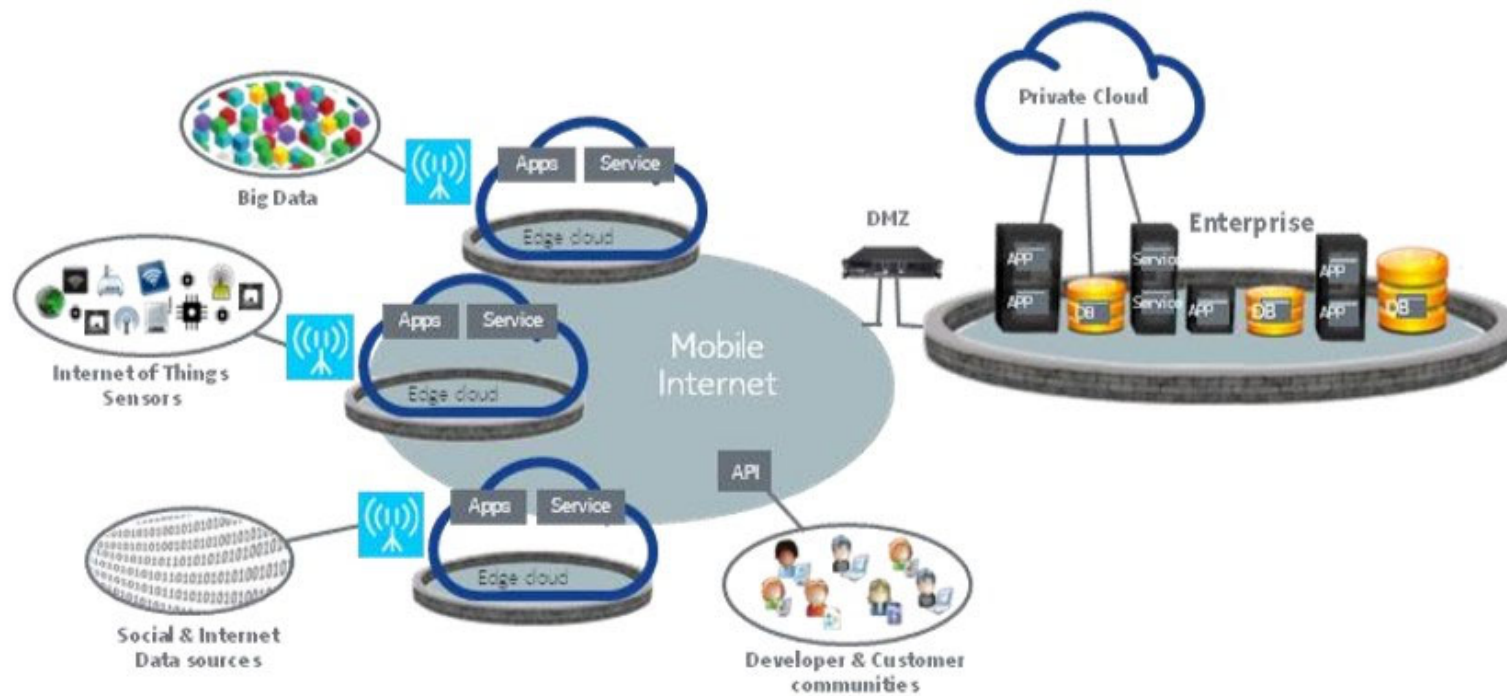
Introduction - continue



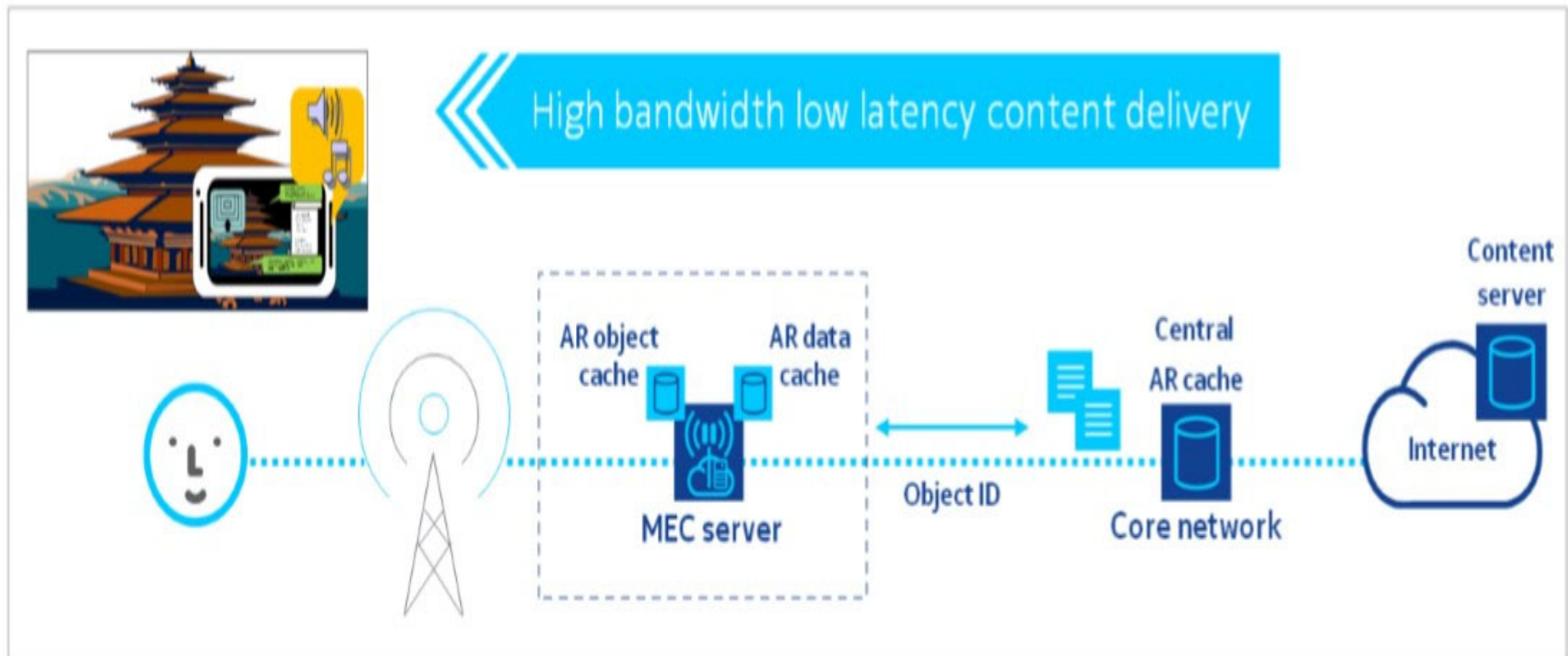
Market Drivers



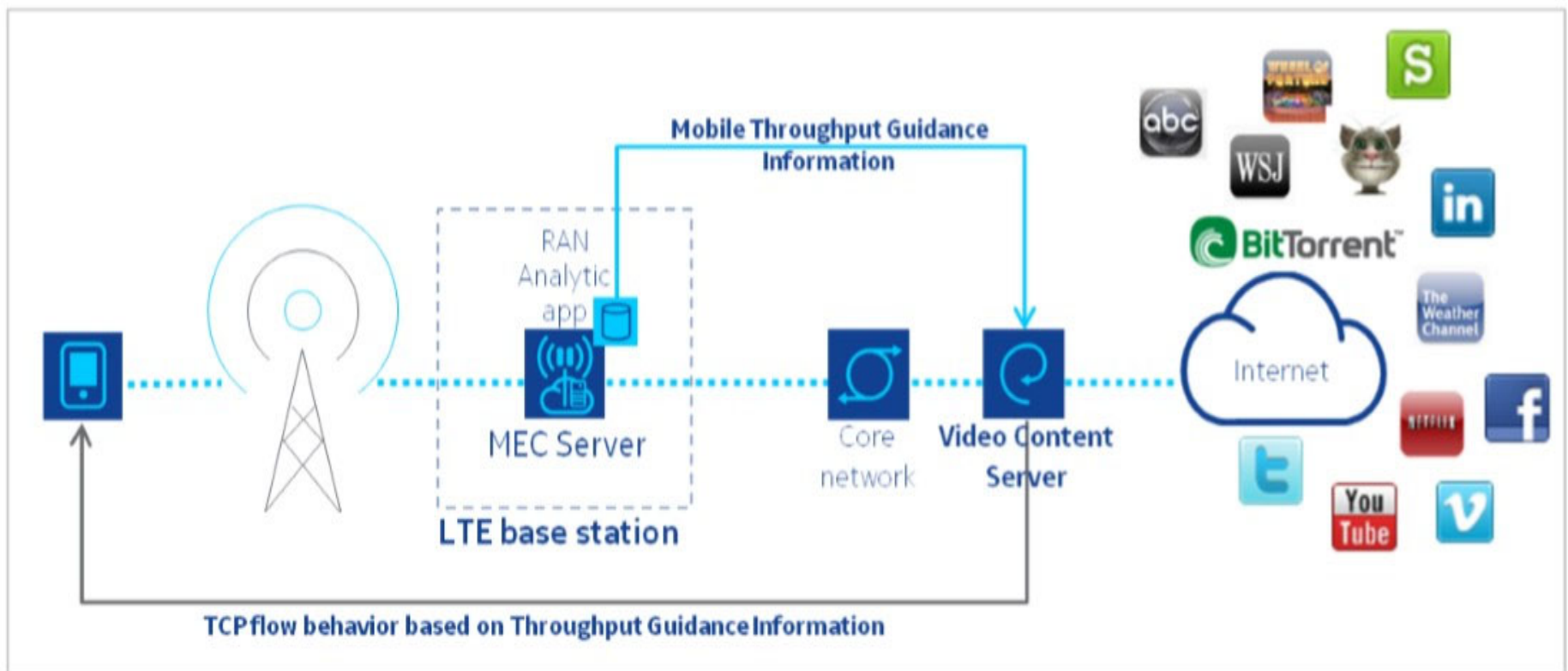
Business Value



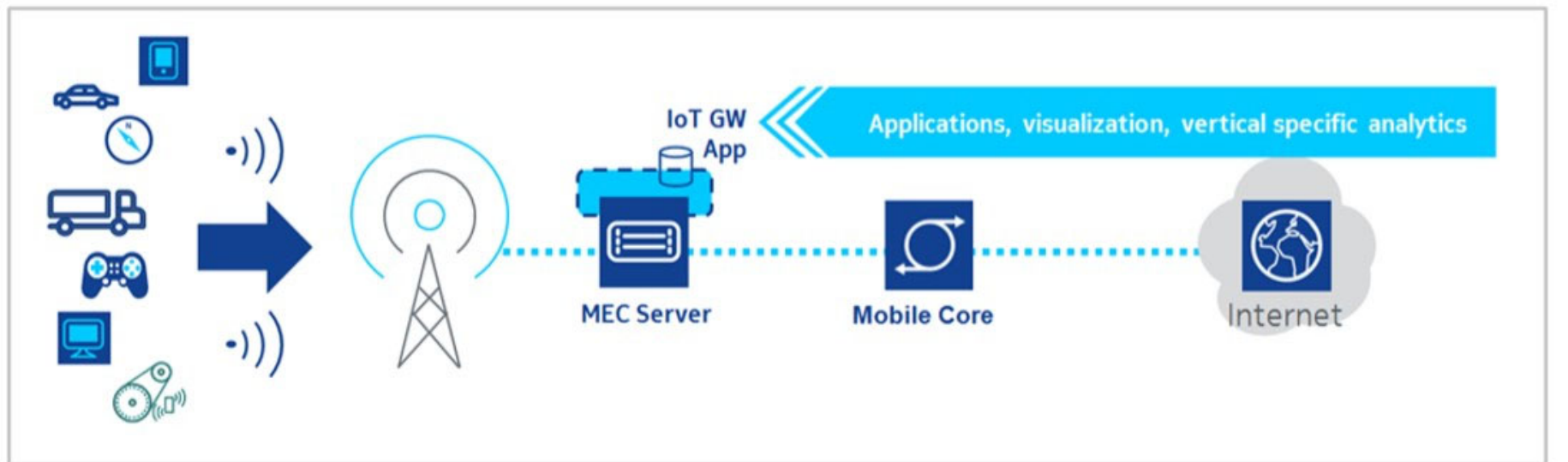
Mobile Edge Computing Service Scenarios



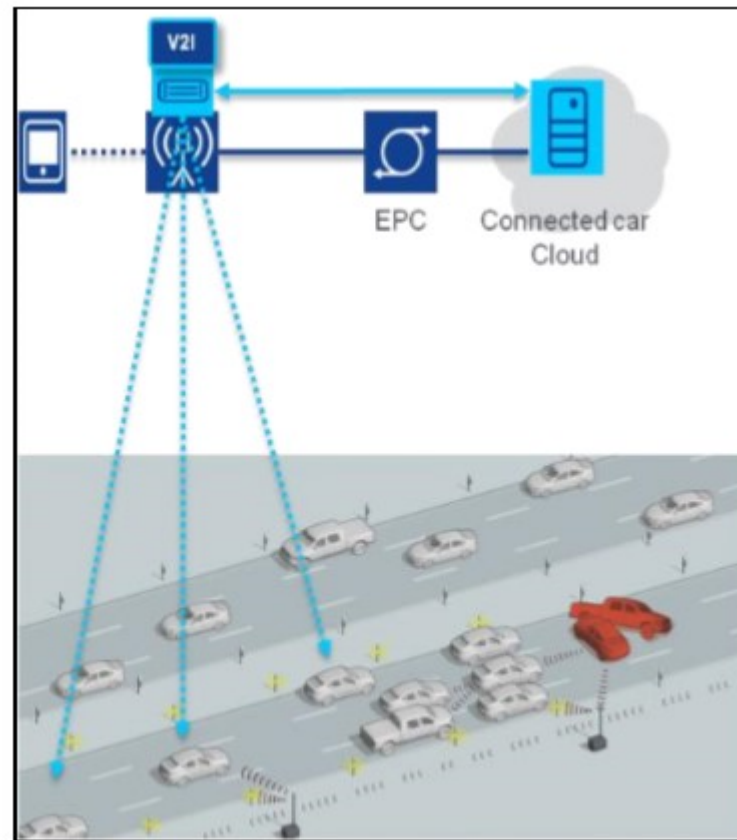
Mobile Edge Computing Service Scenarios- Continue



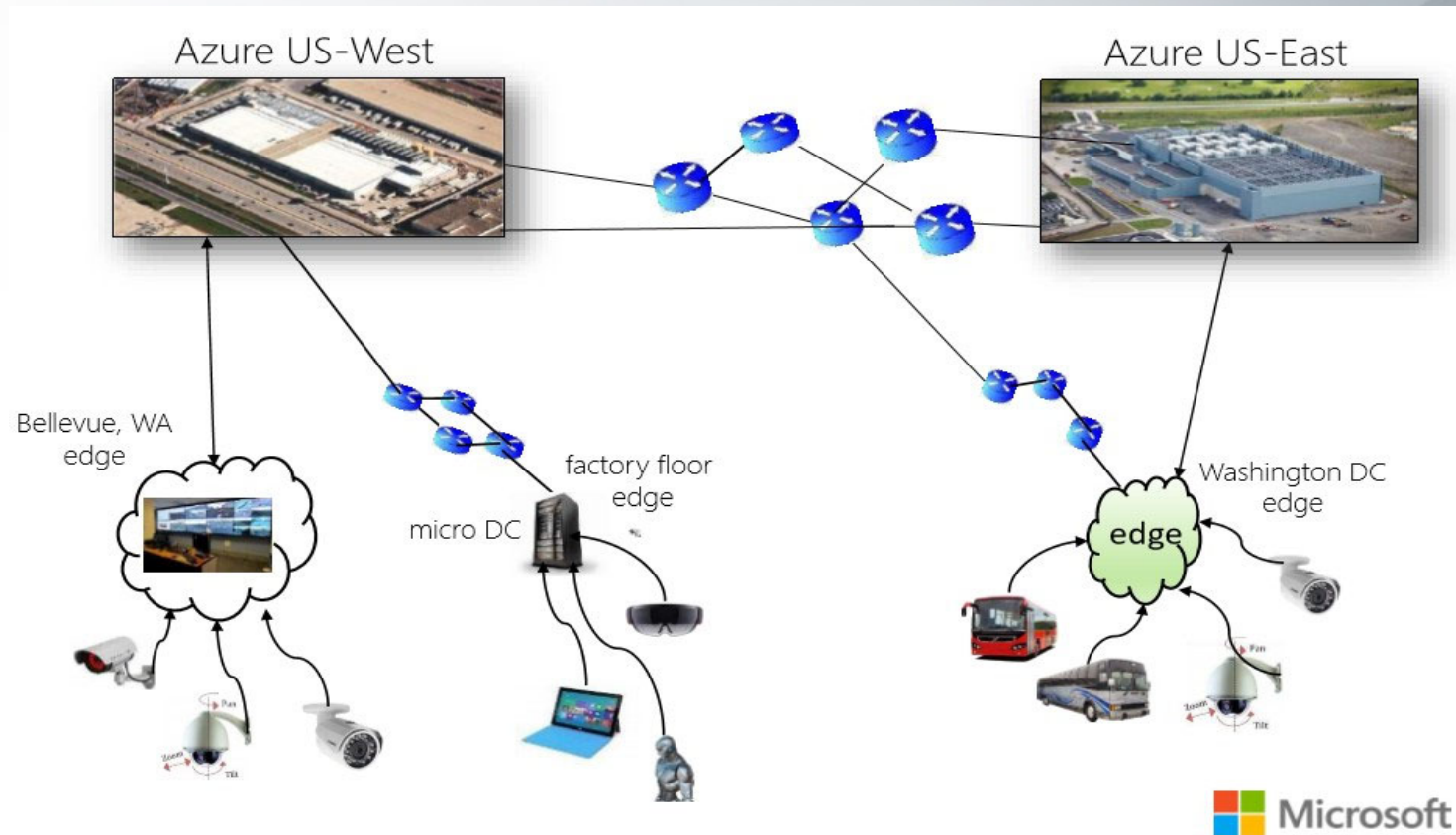
Mobile Edge Computing Service Scenarios- Continue



Mobile Edge Computing Service Scenarios- Continue



Deployment: Hybrid Edge-Cloud Architecture



Data Center Deployment Example



AQUAMAN'S SECOND CAREER IS IN IT—

Microsoft declares its underwater data center test was a success

Underwater pods can reduce latency by moving cloud services closer to customers.

JIM SALTER - 9/14/2020, 2:58 PM



Enlarge / The Northern Isles, a 12-rack / 864-server underwater data center pod, is winched off the seafloor in this picture after its two-year trial deployment.

Edge Computing Student Readiness



Programming Languages - Python, C++, SQL, R, and C#

Networking - Routing, TCP/IP Protocols, VPN, Cellular Service (5G), LTE, etc.

Virtualization - Virtual Machines (VMs), Virtual Network Functions (VNFs)

Security - SSL, Encryption, MFA, etc.

Storage - Object base, block storage, etc.

Cloud Computing – Compute, Network, Storage, and IAM

Publishing Articles and Dissertation



Nunna, S., Kousaridas, A., Ibrahim, M., Dillinger, M., Thuemmler, C., Feussner, H., & Schneider, A. (2015). Enabling Real-Time Context-Aware Collaboration through 5G and Mobile Edge Computing. *2015 12th International Conference on Information Technology - New Generations*, 4–15. [doi:10.1109/itng.2015.155](https://doi.org/10.1109/itng.2015.155)

Tocze, K., & Nadjim-Tehrani, S. (2018). A taxonomy for management and optimization of multiple resources in edge computing: Wireless communications and mobile computing. Retrieved from <https://www.hindawi.com/journals/wcmc/2018/7476201/>

Syamkumar, M., Barford, P., & Durairajan, R. (2018). Deployment characteristics of “the edge” in mobile edge computing. *Proceedings of the 2018 workshop on mobile edge communications*, 43–49. [doi:10.1145/3229556.3229557](https://doi.org/10.1145/3229556.3229557)

Gregory Newman's Dissertation Topic: - Factors Affecting The Slow Adoption Of Edge Computing In The United States: A Quantitative Study - ProQuest

Conclusion



Questions???