Making the Business Case for

Information Systems Networks and Managing Projects Assignment

Project FC Network Initiative:

Building Amazon's Next-Generation Fulfillment Network

Instructions

Give an example of a company or organization using project management to build a computer network.

Be detailed in your example and include all of the following:

1. Advantages and disadvantages of building a new network.
2. Costs of building a network.
3. What a new network could be used for.
4. How networks are used today.
5. When networks are used.
6. Why networks are used.
7. Which companies and people are using networks (Give examples).
8. How does building a network improve current IT infrastructure.
9. How has building a network changed over time.
10. Which companies produce it.
11. What are the future prospects of networks.
12. How do networks affect you and your IT habits.

Project FC Network Initiative: Building Amazon's Next-Generation Fulfillment Network

Amazon is an excellent example of how project management principles can scale and optimize the implementation of advanced computer networks. In recent years, Amazon undertook one of its most significant network transformations with its new Fulfillment Center (FC) and "regionalization" by restructuring its national infrastructure into eight self-sufficient regional networks. The regionalization transition used advanced network-optimization algorithms and simulation modeling to define optimal delivery routes and strategic placement of FCs (O'Neil, 2023). As a result, the restructuring sharply increased network and package delivery speeds, reduced long-haul shipping, and made operations far more efficient (O'Neil, 2023). Amazon's adaptive and flexible approach towards evolving global needs during troubling times (i.e., COVID-19 pandemic) and peak operational seasons (i.e., Prime Day) mirrors the core business-case principles found in Information Systems Network planning frameworks and the Systems Development Life Cycles (SDLC), including strategic alignment, risk evaluation, and the organizational changes required for successful implementation.

Advantages and Disadvantages of Building a New Network

A new network at Amazon facilities delivers improved speed, reliability, and enhanced automation efficiency (Panko & Panko, 2020; O'Neil, 2023). For example, improved regionalization ensures faster delivery, shorter distances, fuller trucks, and cost savings without sacrificing product selection for Amazon customers.

However, significant disadvantages may persist, including high upfront costs, the risk of operational disruption or failure during cutover, and complex change-management requirements for staff and systems to quickly adapt (O'Neil, 2023). Thus, to ensure projects are viable from financial, technical, and organizational standpoints, company decision-makers strive to identify potential issues and risks as early as possible during a Feasibility Study of the Systems Analysis phase (Panko & Panko, 2020).

Costs of Building a Network

Amazon's investment includes tangible costs (e.g., switches, routers, cabling, servers, wireless access points, firewalls, cloud services, labor, and contracts). Capital budgeting models such as ROI, NPV, and payback period are used to help justify these massive capital expenditures quantitatively.

Intangible costs (i.e., Project Risks) include temporary productivity losses during transitions, employee training, increased management oversight, organizational restructuring, and organizational disruption as workflows and systems change (Panko & Panko, 2020; O'Neil, 2023). Amazon can address these risks during the Implementation phase by employing a Pilot Study conversion strategy. Amazon would test the new network extensively in small, isolated zones of the FC before the final cutover to help mitigate any risk of widespread operational disruption.

What the New Network Could Be Used For

Amazon uses its network for automated picking robots, real-time barcode scanning, conveyor belts, VoIP communication, security, shipping updates, and integration with cloud systems for deep analytics and forecasting (O'Neil, 2023; Godden, 2025). Machine learning and IoT devices enable real-time/live optimization, while new software like ATROPS dynamically assigns routes based on a customer's location as soon as a purchase is made (O'Neil, 2023). This connectivity, often secured via AWS Direct Connect, links the physical FC network to the global cloud backbone for mission-critical services. New software like ATROPS then dynamically assigns optimal delivery routes based on real-time data as soon as a customer's purchase is made (O'Neil, 2023).

How and When Networks Are Used (Today)

Amazon's fulfillment networks must facilitate round-the-clock decision-making and automation to meet the high expectations of their customers and company goals/benchmarks. Amazon strives for a gold-standard level of online availability (i.e., the Five Nines, 99.999% uptime) and a 24/7/365 delivery schedule (O'Neil, 2023). During peak operations like Prime Day, Amazon must handle extreme, variable load shifts with zero failures, demonstrating a critical focus on redundancy and scalability. Amazon's FCs and regionalization ensure most orders can be fulfilled entirely within their region, boosting network efficiency and delivery speed (O'Neil, 2023).

Why Networks Are Used

Networks bring scalability, accuracy, and speed to Amazon. Networks can help reduce errors and costs through sophisticated automated processes for tasks such as inventory management and customer service (Panko & Panko, 2020; O'Neil, 2023). In general, organizations and individuals use networks to ensure immediate data accuracy, automate manual processes, and increase speed, directly aligning with the strategic goals of customer obsession and operational efficiency (Panko & Panko, 2020).

Which Companies and People Use Networks

Alongside Amazon, major retailers and logistics firms (Walmart, UPS), financial institutions (Bank of America), healthcare providers, and cloud platform developers (Microsoft Azure, Google Cloud) depend on large and sophisticated computer networks. Employees—from warehouse staff using handheld scanners to cloud engineers who remotely manage the AWS Virtual Private Cloud (VPC) infrastructure that services the FC—require fast, secure connectivity for daily operations (O'Neil, 2023; Godden, 2025).

How Building a Network Improves IT Infrastructure

Each new Amazon network modernizes legacy systems, increases bandwidth, and bolsters cybersecurity. Specifically, a new network architecture provides the necessary foundation for Edge Computing, bringing data processing closer to the vast number of IoT devices on the warehouse floor. The low-latency environment significantly improves real-time robot coordination. Furthermore, cloud migrations boost sustainability, as AWS infrastructure is up to 4.1 times more energy efficient than traditional on-premises solutions (Godden, 2025). Lastly, the latest cloud migrations to AWS enable elastic scaling for AI workloads and boost sustainability.

How Network Building Has Changed Over Time

Network building has evolved dramatically over the years. It has shifted from simple, manually configured LAN setups to hybrid cloud architectures utilizing Software-Defined Networking (SDN), virtualization, and massive IoT integration. Traditional waterfall methods have mainly been replaced by agile development, prototyping, and outsourcing—as detailed in the course material (Panko & Panko, 2020; Godden, 2025).

Companies That Produce Networking Technology

Relevant providers include Cisco, Juniper Networks, HPE (Aruba), Ubiquiti, Palo Alto Networks, and dominant cloud infrastructure vendors such as AWS and Azure (Panko & Panko, 2020; Godden, 2025).

Future Prospects of Networks

Networks are progressing towards automation, AI-driven monitoring, zero-trust security, edge computing, and 5G. The next decade will see greater integration of IoT, robotics, and real-time analytics, strengthening supply chains and customer service capabilities (O'Neil, 2023; Godden, 2025).

Networks are moving toward radical automation, AI-driven monitoring and maintenance, zero-trust security models, advanced edge computing, and the integration of high-speed 5G/6G wireless technology. The critical link between networking and artificial intelligence (AI) requires organizations to make a decisive shift away from legacy infrastructure, as only cloud-native networks can handle the immense, elastic GPU access and petabyte-scale data-processing required by modern AI workloads (Godden, 2025).

How Networks Affect My IT Habits

Amazon's shift towards advanced networks and cloud adoption influences everyday IT habits—from faster, more secure access to cloud systems to expectations for resilient, sustainable connectivity. That extends to my schoolwork, VPN use, online collaboration through platforms like LinkedIn, and SOHO cybersecurity management (Panko & Panko, 2020; Godden, 2025).

References

Godden, T. (2025, July 29). *Why 2025 is the Inflection Point for AWS Cloud Migration*. AWS Cloud Enterprise Strategy Blog. Retrieved from https://aws.amazon.com/blogs/enterprise-strategy/why-2025-is-the-inflection-point-for-aws-cloud-migration/

O'Neil, S. (2023, July 24). *Sizing down to scale up: How Amazon reworked its fulfillment network to meet customer demand*. Amazon Science. Retrieved from https://www.amazon.science/news-and-features/how-amazon-reworked-its-fulfillment-network-to-meet-customer-demand

Panko, R. R., & Panko, J. L. (2020). Business data networks and security (11th ed.). Pearson.