**OM 302 F20 Quiz 3**

**Notes and Definitions**

**11/20/20**

**1. The NWC rule:** a systematic procedure for establishing an initial feasible solution to the transportation problem. The rule allows for the problem to be either balanced or have a surplus or a deficit.

**2. The "Cross-docking":** when distribution centers receive bulk shipments, break them down, repackage various items into outgoing orders, and then these orders to a manufacturing location or retail centers. A technique whereby goods arriving at a warehouse from a supplier are unloaded from the supplier’s truck and loaded onto outbound trucks, thereby avoiding warehouse storage.

**3. The Shortest Path**: minimizes the distance through the network. It is the shortest path from the origin to the destination.

**4. The "Minimal Spanning Tree":** connects nodes of a network while minimizing the distance between them. Can begin at any node.

**5. A "Travelling Salesman" Technique:** finding the best delivery route for one vehicle, which minimizes time, mileage, or cost objectives. The start point and the endpoint are the same.

**6. Factors affecting Location Decisions:** allocation method that instills objectivity into the process of identifying hard-to evaluate costs, political risks, government rules, economic risk, attitudes, incentives, social aspects, cultural and economic issues, location of markets, labor and talent availability, availability of supplies, communications, energy, operating costs, exchange rates, and currency risks.

**7. The "Competitiveness Index":** How effective an organization meets the wants and needs of customers relative to others that offer similar goods or services. Ranks countries based on the ease of doing business.

**8. Labor productivity:** Productivity is a measure of the effective use of resources, usually expressed as the ratio of output to input. Labor productivity = quantity produced/labor hours. One of the components of the location decisions.

**9. Productivity:** The ratio of output (goods and services) divided by one or more inputs such as labor, capital, or management.

**10. Single-factor productivity:** indicates the ratio of one resource (input) to the goods and services produced (outputs)

**11. Multi-factor productivity:** indicates the ratio of many or all resources (inputs) to the goods and services produced (outputs).

# **12. Transparency International:** is a global movement working in over 100 countries to end the injustice of corruption, focus on issues with the greatest impact on people’s lives, and hold the powerful to account for the common good. Using advocacy, campaigning, and research, TI works to expose the systems and networks that enable corruption to thrive, demanding greater transparency and integrity in all areas of public life. The mission is to stop corruption and promote transparency, accountability, and integrity at all levels and across all sectors of society.

**13. Political Risk:** is the risk an investment's returns could suffer as a result of political changes or instability in a country. Instability affecting [investment](https://www.investopedia.com/terms/i/investment.asp) returns could stem from a change in government, legislative bodies, other foreign policymakers, or military control. Political risk is also known as "geopolitical risk," and becomes more of a factor as the [time horizon](https://www.investopedia.com/terms/t/timehorizon.asp) of investment gets longer. This risk is a part of making business decisions to expand internationally.

**14. Industry Clustering:** the location of competing companies near each other, often because of a critical mass of information, talent, venture capital, or natural resources.

**15. The "Factor Rating" method:** An analysis method that can be used to compare the attractiveness of potential manufacturing or service locations along a number of quantitative and qualitative dimensions. General approach to evaluating locations that include qualitative and quantitative inputs.

**16. A Location break-even analysis:** a cost-volume analysis to make an economic comparison of location alternatives. These alternatives may be less or more attractive based on the production volumes.

**17. The "Center of Gravity" method:** graphically finds a central location that tends to minimize the total transportation costs between the proposed facility and any number of markets the proposed facility will serve. This method assumes that the transportation costs vary directly with distance, and no special shipping costs are considered. Also referred to as the centroid method.

**18. The "Load-Distance" method:** The load-distance method is a mathematical model used to evaluate locations based on proximity factors. The objective is to select a location that minimizes the total weighted loads moving into and out of the facility. The distance between two points is expressed by assigning the points to grid coordinates on a map.

**19. GIS software:** a computer-based tool for collecting, storing, retrieving, and displaying demographic data on maps. Can be used to identify the best locations, target markets, or transportation routes.

**20. The Dell's production system:** uses the JIT method.

**21. Hard Rock Cafe's location selection:** is based on: multifactor analysis.

**22. The "Bullwhip" Effect:** forecast of demand combined with additions of safety stock that tend to amplify purchases from suppliers. As suppliers then make forecasts and also add safety stock, inventories become still more amplified as we move back up the supply chain. This inventory amplification problem can add significant cost to the supply chain. Inventory oscillations become progressively larger looking backward through the supply chain.

**23. The Vendor selection process**: involves taking into account many factors such as price, quality, reputation, set-asides guidance’s, previous experiences, service after sale. Because different factors are important for different situations, purchasing must decide, with the help of operations, the importance of each factor. In many cases this process is subjective.

**24. Ethical Concerns:** related to outsourcing and offshoring should be considered. Examples of unethical behavior may involve bribing government or company officials to secure permits or favorable status, exporting “smog stacks” to developing countries, claiming the “green” operations when it is not so, ignoring health, safety, and environmental standards, paying substandard wages, mislabeling country of origin, and selling goods abroad that are banned at home.

**25. Successful Supply Chains:** are built on: the cooperation principles.

**26. Supply Chain Visibility:** A training partner can connect to its supply chain to access data in real-time. Both use the Electronic Exchange Interface to do that.

**27. Vendor Analysis:** Evaluating the sources of supply in terms of price, quality, reputation, and service.

**28. Event Response Capability:** The ability to respond to unplanned events.

**29. Purchasing Cycle:** Purchasing cycle: a sequence of steps that begin with a request for purchase and end with notification of shipment received in satisfactory condition.

**30. Resiliency:** The ability of a business to recognize and recover from an event that negatively impacts the supply chain.

**31. Inventory Velocity:** The pace at which goods traverse the supply chain. A supply chain to be effective and efficient cannot have any bottlenecks or single points of failure.

**32. Logistics:** the process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from point of origin to point of consumption to conform to customer requirements. The transfer of goods, services, cash, and information in a supply chain.

**33. Logistics Management:** combines warehouse location planning, transportation management, and product returns management with the goal of meeting customer service requirements at the lowest possible costs.

**34. Balanced Supply and Demand:** occurs when total demand equals total supply.

**35. The special-purpose transportation and assignment algorithms**: are more efficient using the linear programming simplex method.

**36. Feasible Solution:** is reached when all demand and supply constraints are met.

**37. Transportation Problem:** a specific case of linear programming concerned with scheduling shipments from sources to destinations so that total transportation costs are minimized.

**38. Location Decisions:** decisions that involve the market to be served, the potential locations available to serve the market, and then the site selection based on company requirements and each potential site’s assessment.

**39. National Competitiveness:** the set of institutions, policies, and factors that determine the level of productivity, in turn, sets the level of prosperity that can be earned by an economy.

**40. Location Cost-profit-volume Analysis:** technique for evaluating location choices in economic terms.

**41. The Transportation Problem:** involves determining a minimum-cost plan for shipping from multiply sources to multiple destinations.

**42. Transportation Model:** a technique for solving a class of linear programming problems.

**43. Supply Chain:** a sequence of organizations-their facilities, functions, and activities that are involved in producing and delivering a product or service.

**44. Strategic Partnering:** two or more business organizations that have complementary products or services join so that each may realize a strategic benefit.

# **45. Transshipment:** is the [shipment](https://en.wikipedia.org/wiki/Shipment) of [goods](https://en.wikipedia.org/wiki/Cargo) or [containers](https://en.wikipedia.org/wiki/Intermodal_container) to an intermediate destination, then to another destination. Shipments from sources are received by the intermediate destination, sorted, and shipped to the final destination (cross-docking).