Service Network Analysis Procedure (SNAP)

Strategic Planning of

Service Facility Locations

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What is a Service Network?

- A Service Network is the set of facilities that provide a base of operations for work groups providing field services.
- Field services can be thought of as any work that needs to be done remotely, such as construction, maintenance, and other “on-customer-site” activities.
- Work bases for field service groups range from extensive labs, shops, warehouses, crew quarters, and supporting offices to “virtual” facilities (home-based).

Why Analyze Service Network?

The objective of an analysis is to:

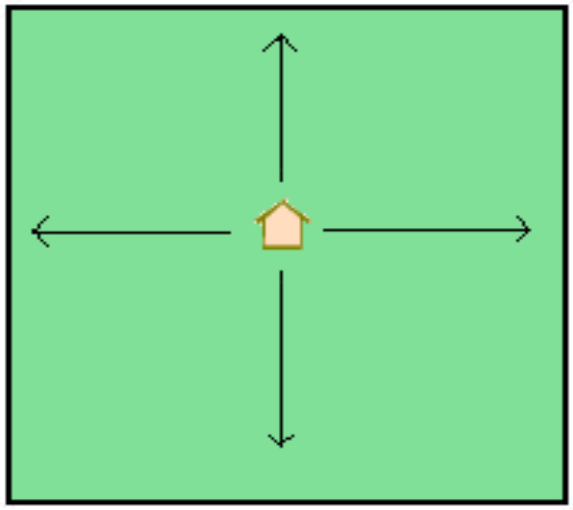
> ***"Have the Right Facilities in the Right Locations at the Right Time"***

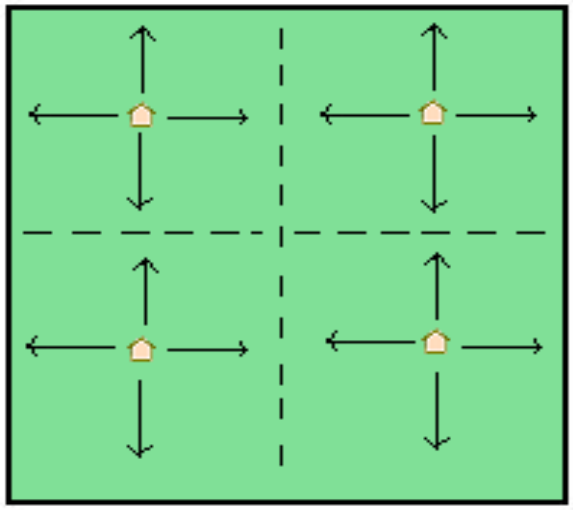
- Typical Customer Service Objective:
  - Ensure service response to every customer within an established time frame.
- Typical Operational Objectives:
  - Maximize "wrench time" by minimizing "windshield time".
  - Deploy workforce efficiently, with suitable facility support and ability to manage effectively.
- Typical Financial Objectives:
  - Minimize overall cost of providing service.
  - Maintain flexibility for changing business needs.

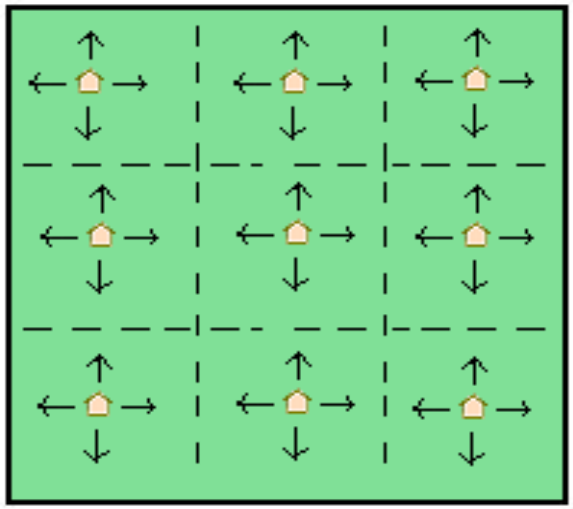
Service Network Analysis Helps Projects Fit Business Plans

1. Business Planning
   - Define the critical issues for success of the business.
2. Strategic Location Planning
   - **Service Network Analysis Procedure (SNAP)** analyzes the geographic aspects of business operations and provides target locations and budgets.
3. Project Planning
   - Use the results of the SNAP to prepare a business case supporting the selected alternative:
     - Specific site selection.
     - Precise definition of space requirements & proposed plan.
     - Financial justification or strategic value of investment.

Consolidation vs. Decentralization

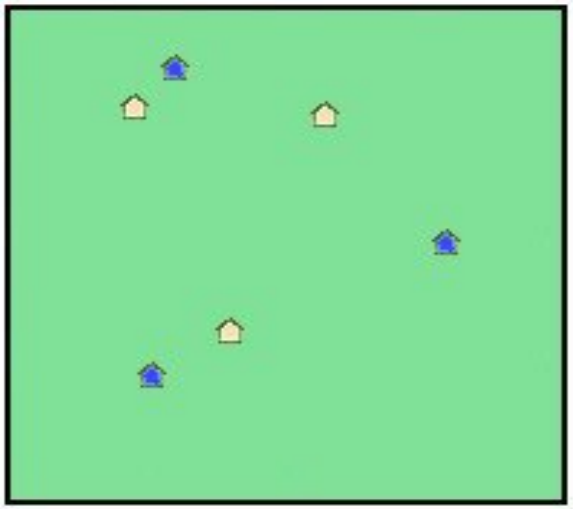


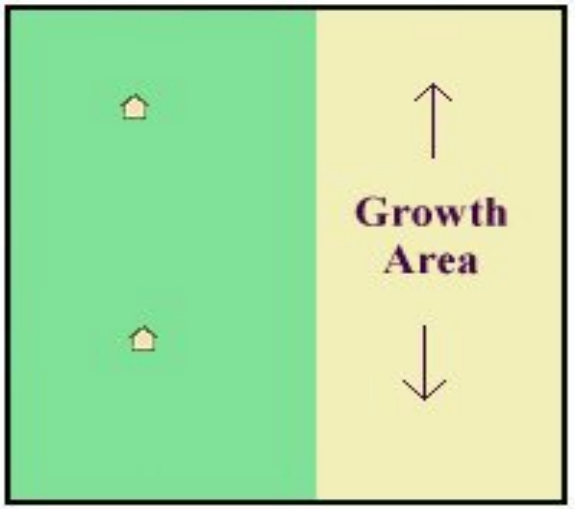




- Increased number of facilities reduces travel time.
- Consolidated facility provides economy of scale and greater workforce flexibility,

Mergers and Expansions

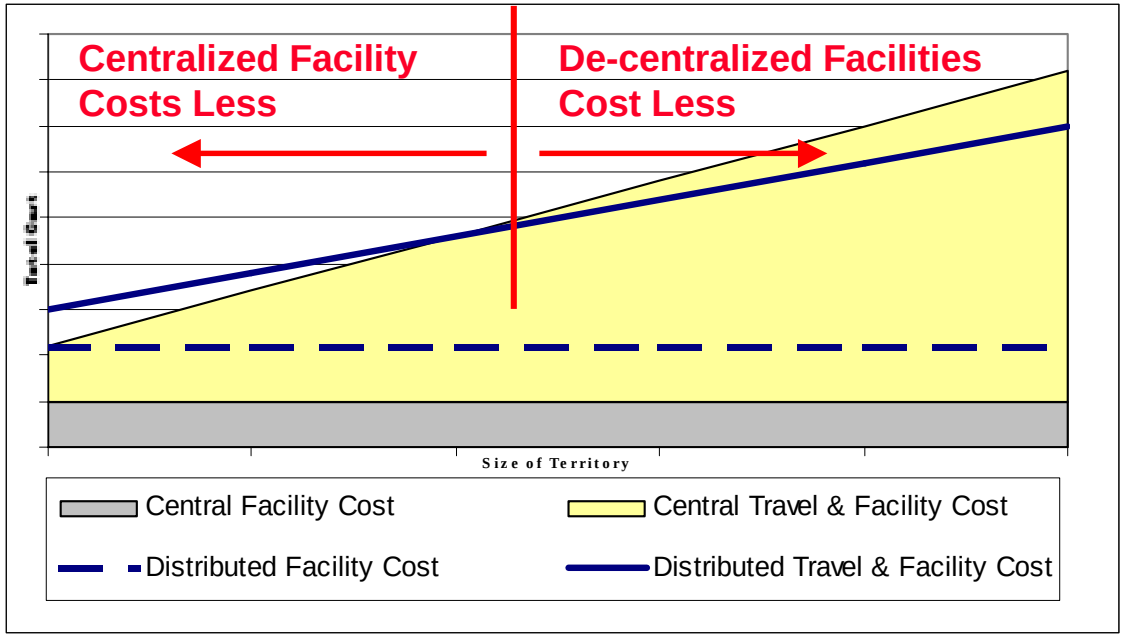




- Merging companies or departments often have geographic overlap where savings can be obtained.
- Expanding markets due to growth or new services often strain existing service networks.

Travel Costs vs. Facility Costs

Best Cost Option is a Function of Facilities & Travel



- Facilities Costs & Time Lost to Travel Have Direct Impact on the Bottom Line:
  - 100% of Savings Become Profit !

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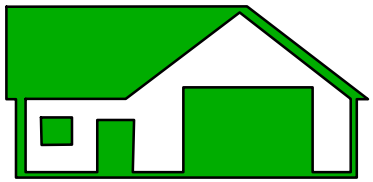
How Is Service Network Analyzed?

- Assemble “Order of Magnitude” Data, with Ability to Easily Replace / Customize Data Sets
  - Use your data.
  - Can use general or detailed level of accuracy.
- Apply Strategic Location Planning Principles
  - Use business operating rules.
  - Recognize geographic implications.
  - Recognize business implications.
- Use Computer Model for Massive & Complex Calculations
  - Evaluate every feasible combination.
  - Critical interpretation of results is important.
- Evaluate Results With Basic Business Metrics
  - Cost.
  - Response time.
  - Explore “What if?” scenarios to evaluate the sensitivity to key parameters.

Model Overview

OBJECTIVE:
Identify the strategic locations of facilities that meet the operational requirements with the *lowest total cost*.



Facility Costs
Inventory Costs

Workgroup Characteristics

Travel Costs

Workload Distribution

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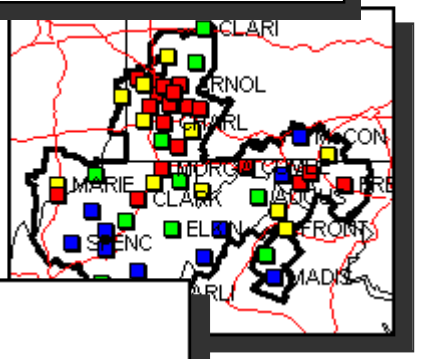
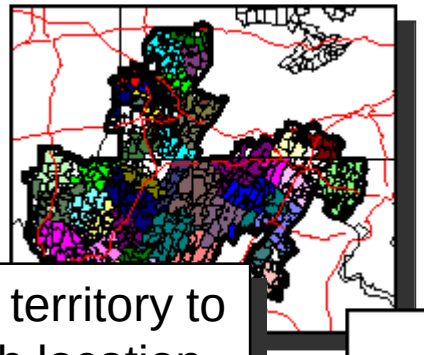
Output Is Mapped...

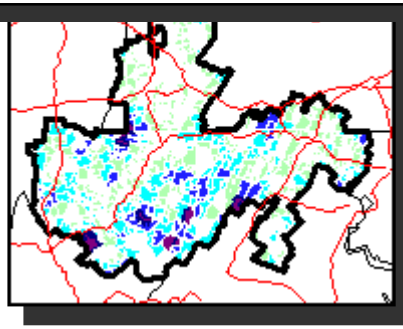
…to show which locations to use based upon territory.

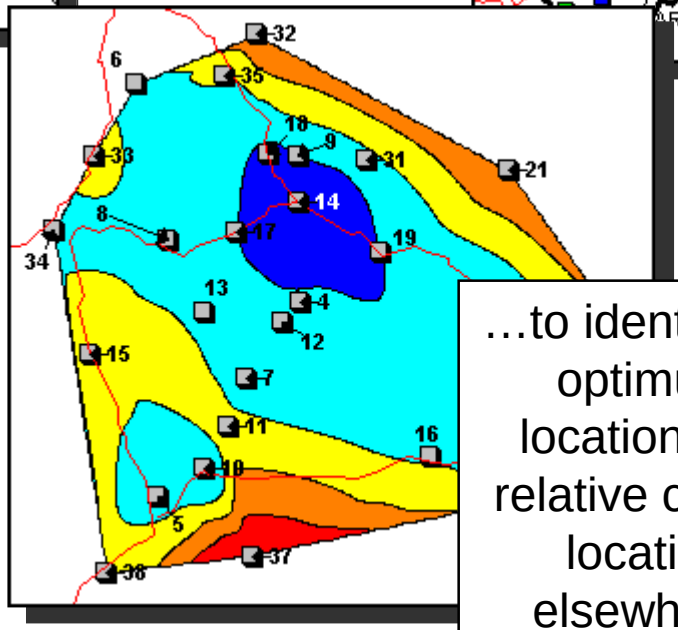


…to show what territory to cover from each location.



…to show areas of weak coverage or high potential.





…to identify the optimum location and relative cost of locating elsewhere.

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...and Tabular

- How many workgroups to base at each location.
- Estimated costs & travel data for each location.
- Budget figures for new facility, expansion, or closure.
- Estimate of costs incurred by not using the optimum configuration.

SCENARIO 3 RESULTS

Location	Used	Number of Groups	Cost to Open or Close	Fixed Operating Costs/Yr	Variable Operating Costs /SF/Yr	GSF Used	Total Facility Cost	Average Trip Minutes	Total Travel Cost
Site 1	Yes	16	$ -	$ 295,605	$ 1,444,300	14,300	$ 1,739,905	23.1	$ 69,107,850
Site 2	Yes	30	$ -	$ 420,000	$ 2,575,500	25,500	$ 2,995,500	15.0	$ 83,621,580
Site 3	Yes	3	$ -	$ 295,605	$ 393,900	3,900	$ 689,505	24.0	$ 12,848,220
Site 3a	Yes	13	$ 422,000	$ 115,000	$ 1,201,900	11,900	$ 1,738,900	18.3	$ 42,859,845
Site 5	Yes	15	$ -	$ 295,605	$ 1,363,500	13,500	$ 1,659,105	25.5	$ 72,428,055
Site 6	No	0	$ 220,000	$ -	$ -	-	$ 220,000	-	$ -
Site 7	Yes	12	$ -	$ 205,480	$ 1,121,100	11,100	$ 1,326,580	15.6	$ 35,202,825
Site 8	No	1	$ 350,000	$ -	$ -	-	$ 350,000	-	$ 6,132,105
Site 9	Yes	9	$ -	$ 295,605	$ 878,700	8,700	$ 1,174,305	27.5	$ 46,309,830
Totals		**99**	**$ 992,000**	**$1,922,900**	**$ 8,978,900**	**88,900**	**$11,893,800**		**$ 368,510,310**

Benefits of a Strategic Approach

- Real Estate Decisions Support the Business Plan
- Quickly Develop & Refine an Action Plan Using SNAP Results:
  - Response times can be used for customer relations.
  - Recommended sites provide target locations and budgets for real estate property acquisition/disposition.
  - Calculated facility sizes/costs provide starting program and budget for architectural planning.
  - Recommended territory per location can help efficiency & balance of workloads.
  - Travel times/costs can be tracked as operational measurement.

Case Study 1 Benefit: Reduced Facility Costs

- **Situation**: Proposed merger of two adjacent companies with combined territory covering parts of 5 eastern states.

- **Study Recommendations**: Consolidation of 52 service facilities into 40 locations:
  - Response time unchanged (less than 4% customers affected).
  - $10 million saved in direct facilities costs (10 year NPV).

Case Study 2 Benefit: Reduced Travel Costs & Response Time

- **Situation**: Proposed addition of a new service facility to cover high growth part of territory of mid-size city in the mid-west.

- **Study Recommendations**: Location of new service facility confirmed.
  - Response time improved for 25% of customers.
  - Estimated travel cost savings approaches $200,000 per year.
  - One existing facility determined to no longer be required.

Questions?

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