GES 678: Week 7

SWOT Analysis and Key Performance Indicators

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Lecture

SWOT Analysis Overview

A SWOT analysis highlights internal Strengths and Weaknesses, and external Opportunities and Threats. It is often shown in a diagram e.g.

Table 1: SWOT table layout

Strengths	Weaknesses
Opportunities	Threats

Strengths

- Centralized Spatial Data management system
  - Single source of truth
- Improved decision-making
  - Visualization and spatial analysis
- Efficiency
  - Automation and Integration
- Scalability in an enterprise environment
- Enhanced public engagement
  - Applications, dashboards, and maps

Weaknesses

- High initial costs for software and data
- Complex integration
- Skill gaps, often limited expertise
- Data collection, governance, and quality challenges
- Risks including system performance and security concerns in an enterprise environment

Opportunities

- Advanced analytics
- Flexibility in environments
- Enhanced data sharing and collaboration
- Optimized asset and resource management
- Public-facing transparency and engagement

Threats

- Budget/resources/schedule
  - Fluctuations or funding instability
- Tech changes and obsolescence
- Security and privacy risks
- Regulatory or compliance changes
- Organizational resistance to enterprise adoption

Measuring the GIS program

- Measurement is essential for demonstrating value
- KPIs provide a way to measure program success

Some KPIs include:

- System Usage
  - Active users, uptime, service requests
- Data Quality
  - Accuracy, completeness, metadata compliance
- Efficiency Gains
  - Time or cost savings from new workflows
- Staff Proficiency
  - Number of classes, training participation, certifications

KPIs should be things *you can control.*

KPIs for opportunities

- Number of GIS apps or dashboards launched or upgraded
- Adoption of mobile and cloud tools
- Cross-departmental collaboration and sharing
- Use of advanced spatial analytics and modeling
- External engagement and open data platform traffic

KPIs for threats

- % budget to project completion
- System within 2 versions of current
- Cybersecurity risks identified and resolved
- Regulatory or compliance changes addressed
- Stakeholder satisfaction
    - Surveys and feedback

SWOT provides a strategic view of the GIS program, including what is working, what's not, growth potential, and risks.

KPIs help the GIS manager measure progress and show success in different areas.

Risk analysis (Tomlinson Ch 10)

Definitions:

Risk an event that may or may not happen could impact the program or project

Issue a previously-identified risk that has occurred and is impacting the program

Risk Management

- Identify
- Assess
- Evaluate
- Response
- Monitor
- Report

Identify types of risk:

- Technology

- Organizational functions
- Organizational interactions
- Constraints
  - Scope
  - Rescheduling
  - Resources
- Stakeholders
- Complexity
- Project planning
- Project management

Scenario 1

Consolidation of GIS program

- GIS analysts and IT application developers
- IT is under-resourced for projects
- New initiatives may be added to existing projects

Results

- GIS staff needs to do more app development
- IT developers will need to develop GIS-centric programs

Risks:

- GIS project could remove onus of updates to existing initiatives
- Untrained developers could introduce security risks
- IT team is already under-resourced, may not have more availability

Risk Assessment

- Ranking: least likely to most likely, on a numeric scale (1-4, 1-10, 1-100)
- Results in overall evaluation rank

Response

Mitigating factors to minimize risk

- Identify what course of actions can be taken to manage
- Who is responsible and accountable
- Timetable for a response

Summarize level of risk:

- Average vs. total score
- Determine acceptability
- Document decisions made during analysis

Monitor and report:

- Document decisions
  - Pros/cons/impacts/stakeholders
- Maintain documentation of risks
- Update on a pre-determined schedule
  - Staff/stakeholders
  - Leadership
- Track which ones become issues/are resolved