



Critical Success Factors for GIS Implementations in Government Institutions of Developing Countries

Presentation Outline

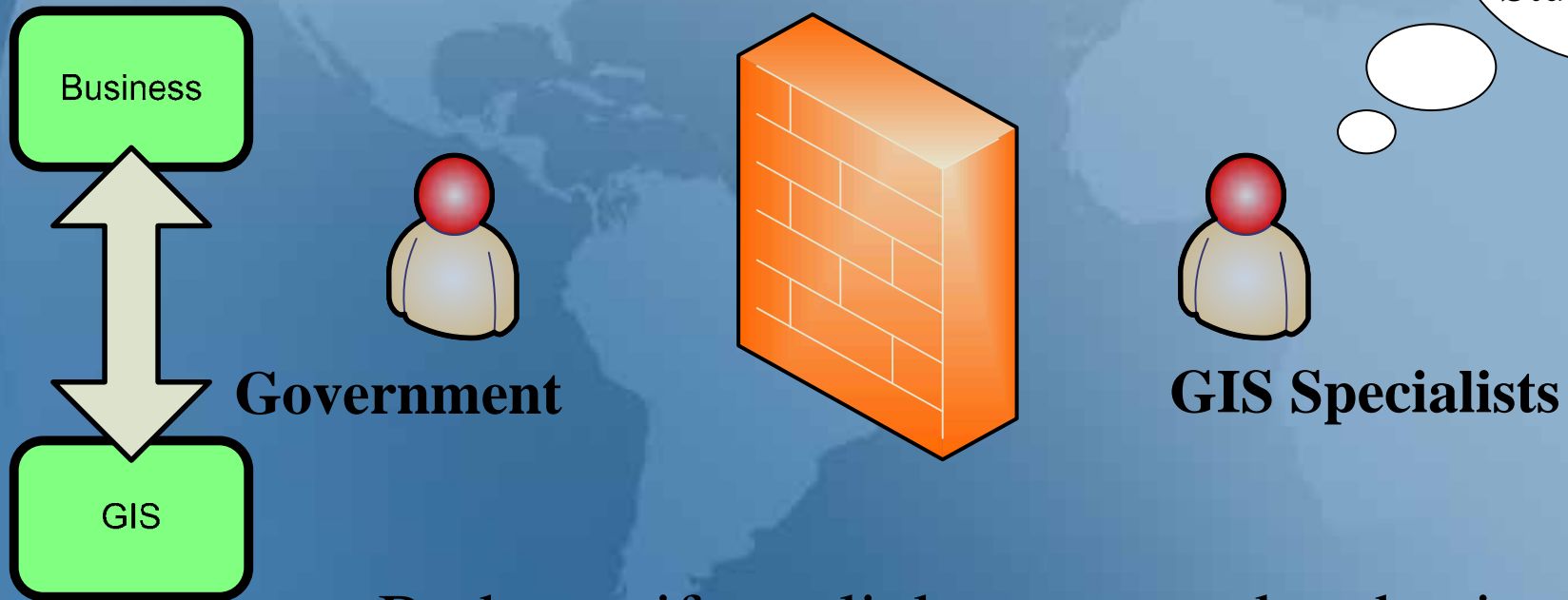
1. Introduction
2. Critical Success Factors (CSF's)
 1. Understand the Business
 2. Information Systems Best Practice
 3. Project Management
 4. Soft Issues

Introduction

- Engineering and IS
- Motivation - Management Issues of GIS important
- Management Principles apply to open source and proprietary systems
- Scope of Presentation
 - GIS viewed as an information management system
 - Government – Local
- Ad hoc systems implementations

CSF No 1 - Understand the “Business”

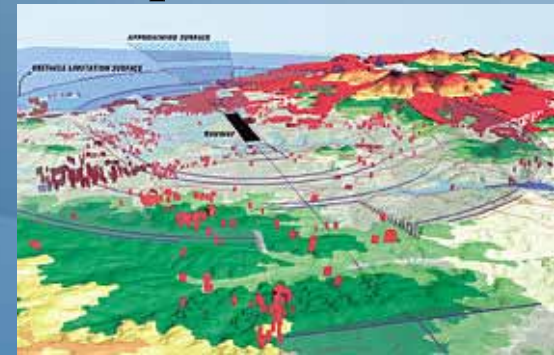
- Most diverse bunch of people from all “walks of life”



Budget – if you link system to key business driver (political driver) budget will be available

CSF No 1 - Understand the Business

- Powers and Functions of LG
 - Mandate of department
 - Local/National integration
- GIS a standalone system or a layer in a systems architecture?
- Doesn't matter as long as its built on a business requirement
- Business analysts – best software I have seen is
- Understand your clients world – bottom up not top down
- Listen to their requirements



CSF No 2 - IS Best Practice

- Standish Group Research 2001:
 - 300 000 information systems projects
 - 26% of these projects were a success
 - Success defined as “projects completed within time and budget and in accordance to their original specifications
- Top four reasons for IT project failure:
 - Insufficient user involvement,
 - Lack of executive management support,
 - No clear business objectives,
 - No experienced project manager



CSF No 2 - IS Best Practice

- Standish Group Research 1994
 - 16% of projects were a success
- Top 3 reasons given then:
 - lack of user input,
 - incomplete requirements and specifications, and
 - changing requirements and specifications.



CSF No 2 - IS Best Practice

- The school of Hard knocks
- Requirements Elicitation and AGILE
- SDLC – methodology – small iterative cycles – focused applications
- Data and Systems – the cart before the horse
- Business analyst
- User requirements should be elicited, documented and managed, executive management support obtained and project champions identified (SRS)

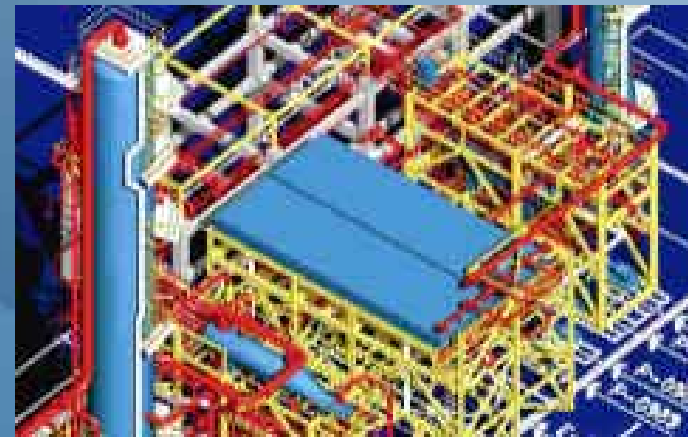


Typical System Requirements Specification (SRS)

System Requirement Category	Examples of Questions asked per Category
Data	What data will the system require initially? What data will be required on an ongoing basis (maintenance)? What database management system should be used?
Hardware	What hardware (server/desktop) will be required to implement the system? How much will this hardware cost? Where will the hardware reside (is an air-conditioned secure server room required)?
Software	Which software technologies are available to meet the requirements? Should open source or proprietary software be used for different parts of the systems architecture? What is the corporate IT policy regarding systems and standards (GIS for example)?
Integration	What other internal/external IT systems will the system have to integrate with? How will data sharing between systems be handled (xml/ftp etc)?
People	Where are the users of the proposed system located? How will users access the system (intranet/internet/LAN/WAN)? What and how much training will users require?
Processes	Define the business processes that the system will support (a system that does not support the business will not be used) What information is generated/required by each business process? Which parts of the business process should the software support?

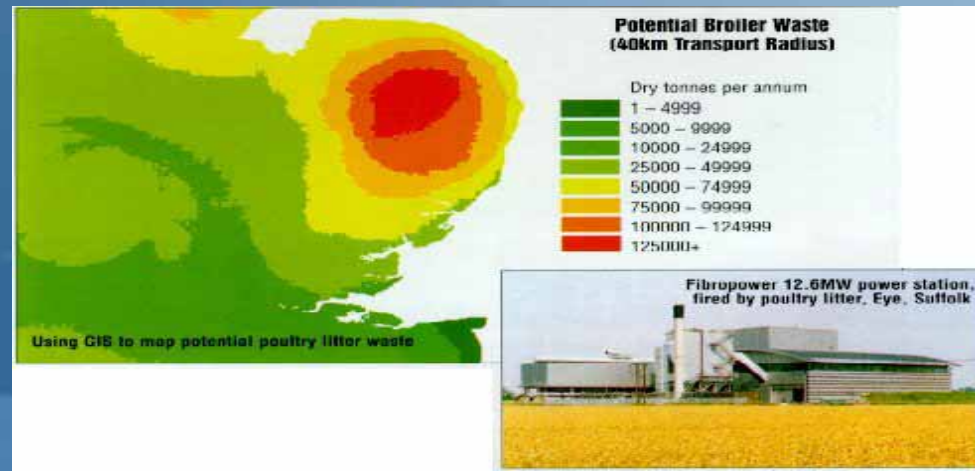
CSF No 3 - Project Management

- Specific project deliverables must be defined in advance and linked to fixed timeframes and budgets
- Link the SRS to milestones
 - % Data loaded
 - 100% systems integration achieved
- Payment linked to demonstrated functionality on actual organisational data



CSF 4 - Soft side of Software

- Challenges
 - Capacity Constraints
 - Short Staffed
 - Local Government is in “Survival Mode”
 - Reactive management vs. Proactive Management
 - GIS is a technology which crosses functional boundaries not only within (intra) but also between (inter) organisations



CSF 4 - Soft side of Software

- How to:
 - Training vs. mentoring
 - What % Functionality will users use



An aerial photograph of a coastal urban area. The land is divided into numerous small, irregularly shaped plots, each outlined with a yellow border. These plots are densely packed in some areas, particularly along the coastline, and more spread out in others. The surrounding water is a deep blue-grey color. The overall scene suggests a land management or urban planning context.

Questions/Comments

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Successful use of GIS in Governments of Developing countries

