

17. Managing GIS

Geographic Information Systems and Science

SECOND EDITION

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Overview

- So you want to be a GIS Manager?
- Choosing a GIS
 - Analysis, specification, evaluation, implementation
- Implementing a GIS
 - Planning, support, communication, resource management, funding
- Operational management
 - Customers, operations, data management, application customization, project management
- GIS staff and their competences



So you want to be a GIS Manager?

- Your role is to make sure:
 - ▣ A good system is selected
 - ▣ It works efficiently
 - ▣ It demonstrably contributes to the organisation's strategic objectives
 - ▣ It is sustainable
- Consequences of failure severe for you and others
- Success demands sharing experience and knowledge with others



An overview of how to get a GIS

- Consider strategic purpose / build case
- Plan for the planning
- Talk to everyone, agree requirements
- Define data, hardware, software, timing
- Create design, choose data model
- Do benefit-cost, migration & risk analyses
- Make implementation plan



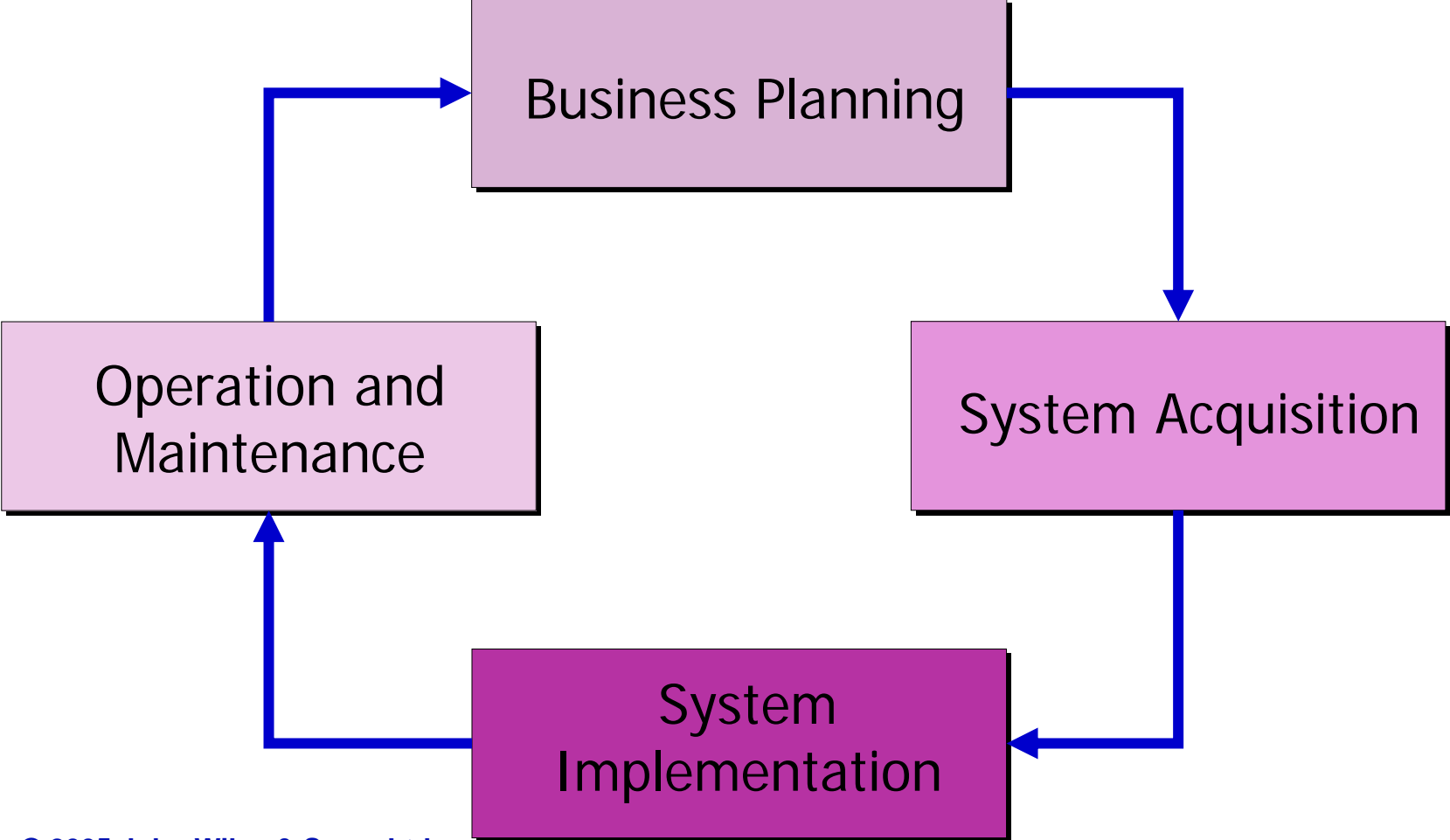
Building the case for a GIS

● Why GIS?

- Cost reduction
 - e.g. tax assessment, work orders
- Cost avoidance
 - e.g. minimize delivery costs, avoid flood damage
- Increased revenue
 - e.g. attract more customers, sell more maps
- Getting wholly new (and valued) products
 - e.g. those too costly or time-consuming previously
- Non-tangible benefits
 - e.g. better decisions, happy staff and customers



GIS Project Lifecycle





Choosing a GIS (classical model)

14 steps, covering:

- Analyse of requirements (including benefit/cost analysis)
- Specify requirements
- Evaluate alternatives
- Implement system



Sample GIS Report

Courtesy Mecklenburg County,
North Carolina

Parcel Information

Parcel ID	Account	Parent	Previous
04319270	INDIVIDUAL	04319299	

Owner(s)

Owner Name	Mailing Address	City/State
YOUNG LARRY M	3736 MARBURY RD	CHARLOTTE NC 28269

Legal Information

Legal	Municipality	Annexed	Special District	Fire District	Acreage
L136 M26-299	CHARLOTTE			CITY OF CHARLOTTE	0

Total Parcel Assessment & Exemptions

Building	Land	Features	Total	Exemption	Year Approved	Review Date	Amount
111100	28000	100	139200				

Sales Information

Sale	Price	Stamps	Qualify	V/I	DeedBook	Type	Legal Ref.	Grantor
Sep 14 1998	0		OTHER	IMP	09917 - 117	DEED STAMPS	09917-117	YOUNG LARRY M & GENE
Dec 18 1997	147500			IMP	09409 - 596	DEED STAMPS	09409-596	RYLAND GROUP INC THE
Jun 17 1997	0		BLDR SALE	VAC	09108 - 887	DEED STAMPS	09108-887	LANDCRAFT PROPERTIES

Land Use

Use	Units	Type	Neighborhood	Assessment
R100	1	LT	E317	28000

Building Information

Bldg	Description	Type	Year Built	Property Location
1	Single-Fam	RES	1997	3736 MARBURY RD CHARLOTTE

Bldg	Story	Units	Total SqFt	Heated	Foundation	Ext. Wall	Grade	Value
1	2.0 STORY	1	2355	1825	SLAB-RES	ALUM,VINYL -	AVERAGE 03	111100

Bldg	Heat	Fuel	FirePlace	AC	Fixtures	Bedrooms	Full Baths	3/4 Baths	1/2 Baths
1	AIR-DUCTED	GAS	1 - FP2	AC-CENTRAL		3	2		1

Sub Areas

Bldg	Description	Size
1	BASE (FIRST FLOOR)	808
1	PORCH - OPEN - FINISHED	110
1	GARAGE - UNFINISHED	420
1	UPPER STORY - FINISHED	1017

Depreciation

Bldg	Physical	Functional	Economic	Special	Override
1	AV - 4%				

Special Features & Yard Items

Bldg	Built	Type	Quantity	Units	Value
1	1997	TERRACE	1	3X6	100

Value Changes

Notice Date	Tax Year	Reason	Changed To	Deferred
Jan 17 2003	2003	Countywide Revaluation	139200	0
Jan 5 1998	1998	Countywide Revaluation	126500	



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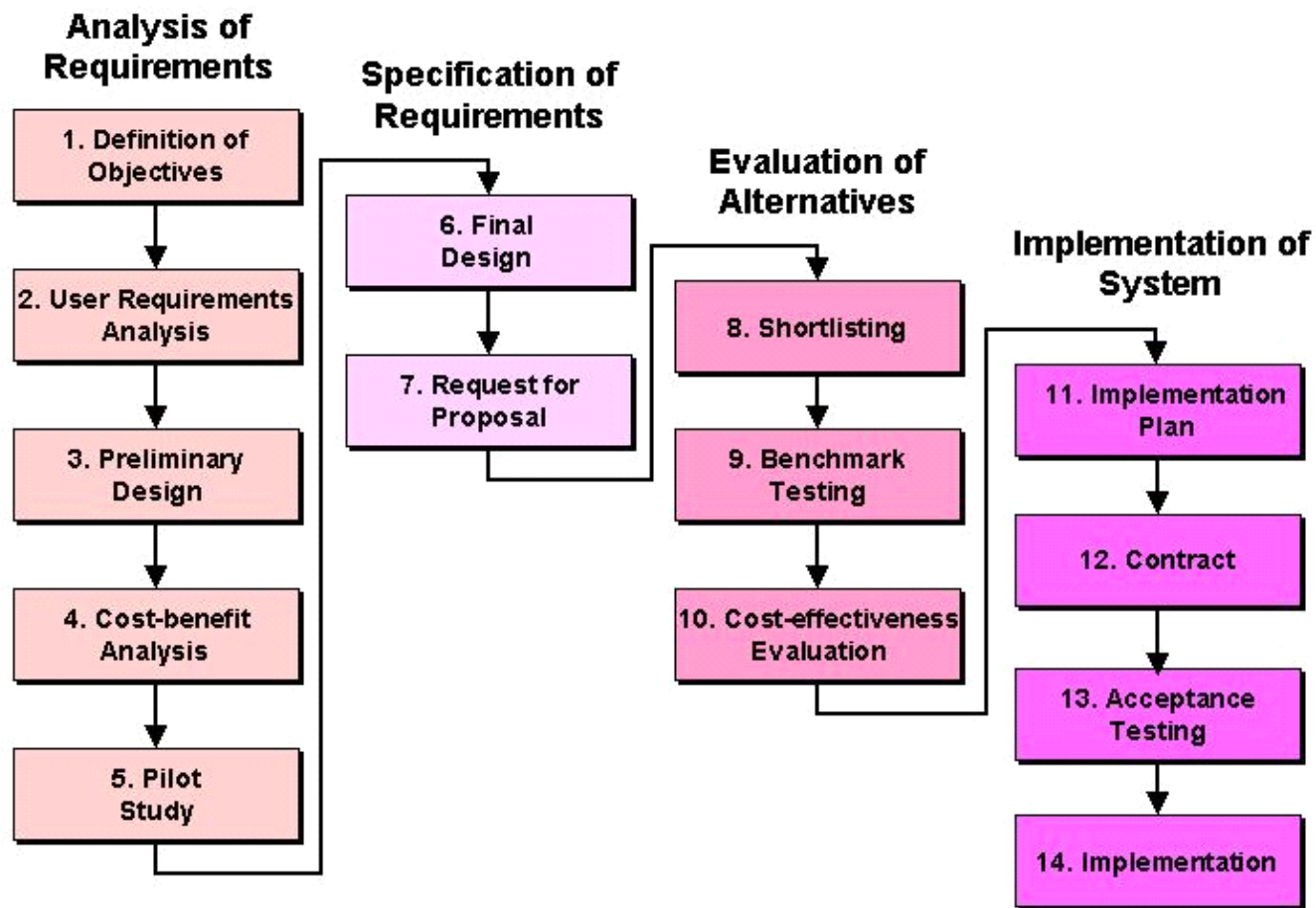
Benefit:Cost Analysis

Category	Costs	Benefits
Economic (tangible)	Hardware and Software	Reduced cost (staff)
	Data purchase, collection	Greater throughput
	Training	Increased revenues
	New staff or skills	New market services or products
	Additional space	
Institutional (intangible)	Interpersonal shifts	Improved client relationships
	Layoffs of low-skilled staff	Better decisions
	Staff anxiety	Improved morale
	Neglect of other projects	Better information flow
		Better culture of 'achievers'



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14 stages of GIS acquisition





GIS Implementation Management Issues (1)

- Plan effectively
- Obtain support
- Communicate with users
- Anticipate and avoid obstacles
- Avoid false economies



GIS Implementation Management Issues (2)

- Ensure database quality and security
- Accommodate GIS within organization
- Avoid unreasonable timeframes
- Secure ongoing funding
- Prevent meltdown



Implementation Tools /Techniques

Technique	Purpose
SWOT Analysis	Strengths, Weaknesses, Opportunities and Threats
Rich Picture Analysis	Consensus process based on pictorial representations
Demonstration systems	Prototypes demos
Interviews and data audits	Structured analysis of roles and data holdings
Organization charts, system diagrams and decision trees	Diagrams of information flows
Data flow diagrams & dictionaries	Track content and flow
Project management tools	GANTT and PERT charts
Object model diagrams	Data model representations



Reasons GIS Fail

- Lack of executive-level commitment
 - Inadequate oversight of key participants
 - Inexperienced managers
 - Unsupportive organizational structure
 - Political pressures e.g. in times of fast change
 - Inability to demonstrate benefits
 - Unrealistic deadlines
 - Poor planning
 - Lack of core funding
- And stupidity!**

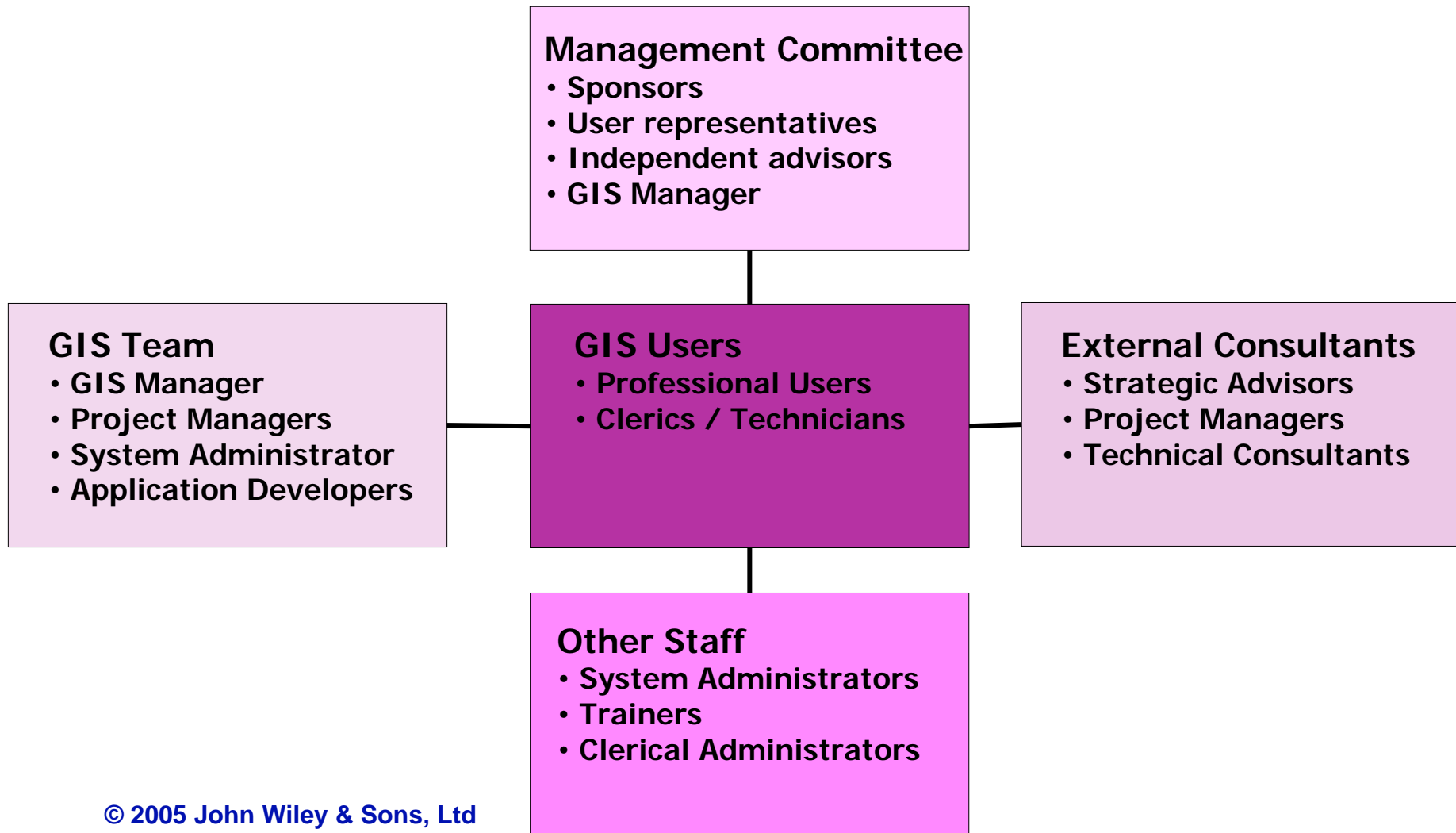


Managing an Operational GIS

- Customer support
 - ▣ All users are customers
 - ▣ Create customer support facility
- Operations support
 - ▣ Administration, backup, system support
 - ▣ Helpdesk
- Data management support
 - ▣ Database Administrator
- On-going application customization
- Use well-proven project management tools



GIS Staff Roles





Golden Rules of Project Management

- Projects must be completed on **time**, within **budget**, and according to quality **standards**
- You will be responsible for the work of others. Make sure they are competent
- Uncertainty of many kinds exists: you have to live with it but agree how much is acceptable
- Have **fun** doing it and celebrate success!



Summary

- GIS management is much the same as other IT management
 - ▣ Mixture of technical and people issues; People ones often trickier
- Involves motivating, organizing, monitoring: some of it is common sense
- Some good rules of thumb to follow
- Most important thing is create, nurture and grow a good team