



**GAIA RESOURCES**

# Environmental Data Management: Measuring Success

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# OVERVIEW

- Data management
- Three example projects
- Measuring success
- Summary
- Questions





# DATA MANAGEMENT

## Why would you bother managing data?



### No data management:

- Can't find it
- Wasted time looking
- Got annoyed

### With data management:

- Found it
- Took no time
- Back to beach





# DATA MANAGEMENT

What is data management?

*"Data management is the development, execution and supervision of plans, policies, programs and practices that control, protect, deliver and enhance the value of data and information assets."*

**Technology?**

- Process that evolves as organisations change





# DATA MANAGEMENT

There are two “evolution paths” we’ve seen in data management:

- **Framework** - the supporting processes and standards
- **Technology** - the tools used to manage data





# DATA MANAGEMENT

## Framework evolution:

- No standards or processes
- Inspired by standards, some processes
- Embracing standards, strong processes
- Evolving standards, deriving new processes





# DATA MANAGEMENT

## Technology evolution:

- Paper
- Spreadsheets (Excel) and other files
- Standalone Database (Access, Filemaker)
- Enterprise Database (PostgreSQL, Oracle)
- Enterprise Application





## EXAMPLES

Three examples in these evolution paths:

- A “**typical**” **small business** undertaking biological surveys
- SouthWest Australian Ecoregion Initiative (**SWAEI**) Systematic Conservation Planning (SCP) Project
- Rio Tinto Environmental Capabilities & Characteristics (**ECC**) Project







# EXAMPLES

“Typical” biological survey company



Rank	Name	Comment	Number
1	Australian S...		2
2	Australian Shelduck (Mountain Duck)		
3	Australian Spotted Crake		





# EXAMPLES

## “Typical” biological survey company

Stepped through the evolution over time as the business changed.

Challenges:

- Skill changes
- Changes in data formats
- Purchasing more ‘stuff’





# EXAMPLES

## “Typical” biological survey company

Was it successful?

- **Objective** – achieved
- **Costs** – controlled, lowered, minimised
- **Time** - saved

**Success!**





# EXAMPLES

## SWAEI SCP Project

- Development of a Systematic Conservation Plan
- “Big” project:





# EXAMPLES

## SWAEI SCP Project

- File-based storage – 249GB ; 68,915 files
- Challenges:
  - Finding the data
  - Different formats
- Evolution stage:
  - **Framework** - standards and processes created
  - **Technology** – databases and file structures





# EXAMPLES

## SWAEI SCP Project

- Was this project a data management **success**?
- **Objective** - delivered a plan
- **Cost** – on budget
- **Time** – in time

**Success!**

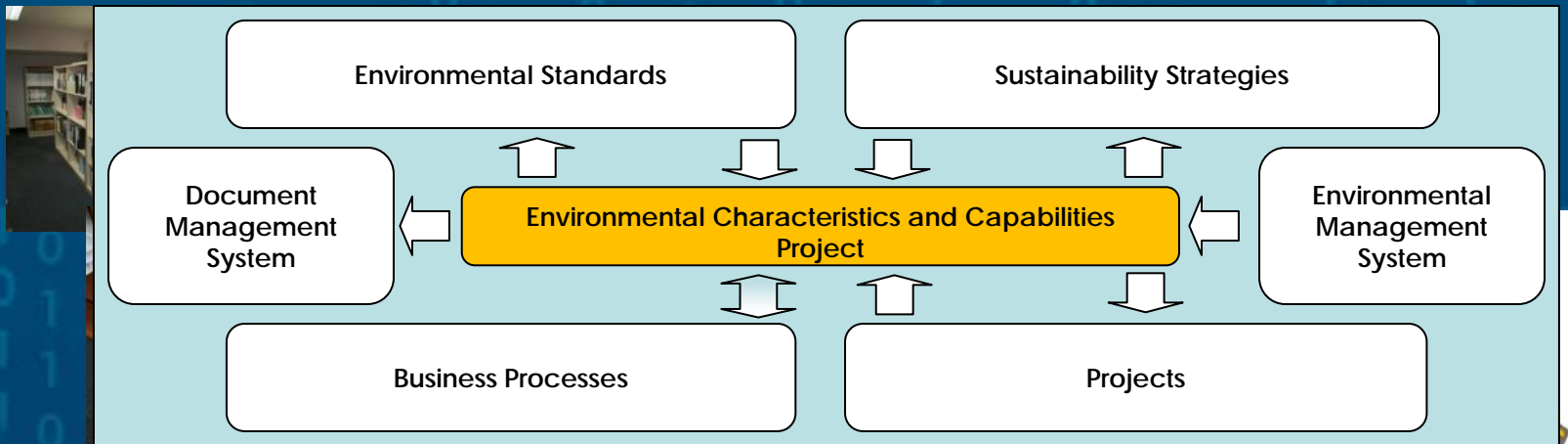




# EXAMPLES

## Rio Tinto ECC Project

- Capture, combine and manage environmental data for all of Rio Tinto's Pilbara operations
- Another "Big" Project:





# EXAMPLES

## Rio Tinto ECC Project

- File based storage - 54.2GB ; 48,151 files
- Challenges:
  - Handover
  - Existing systems to integrate with
  - Developing standards
- Evolution stage:
  - **Framework** - standards and processes evolving
  - **Technology** - databases and file structures







# EXAMPLES

## Rio Tinto ECC Project

- Did we **succeed**?
- **Objective** – data are available
- **Cost** – achieved efficiencies
- **Time** – saves time

**Success!**





# MEASURING SUCCESS

How do you measure success?

- Objective
- Cost
- Time





# MEASURING SUCCESS

How else could you measure success?

- **Process & standards** - do you adhere to them?
- **Errors** – are they recognised and minimised?
- **Value** – how much did you spend collecting it?
- **Open access** – who else can use the data?
- **Biodiversity** – what are the outcomes?





# SUMMARY

How do you **ensure** success?

- Set your objective up front
- Involve people
- Consider opportunities – technology, framework

How do you **measure** success?

- Objective
- Cost
- Time





# QUESTIONS

Any questions?

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