Enterprise GIS

Herbert Resource Information Centre (HRIC)

"The old computing was about what computers could do;
the new computing is about what users can do."
Ben Shneiderman (2002)

Raymond De Lai and Gareck Packer

Photos courtesy of Derek Tickner

Ingham (Queensland, Australia)




Herbert Resource Information Centre (HRIC)

Success through Collaboration

Herbert Resource Information Centre (HRIC) Overview -

- Established in 1996 as a collaborative joint venture to provide a centre of expertise for GIS services to Hinchinbrook Shire Council, CSR, Regional Sugar Industry & Natural Resource Groups.

- Staff - 3
- Shire Area - 2,600 km^2.
- Population - 12,500 people.
- Major Industry – Sugar Cane.

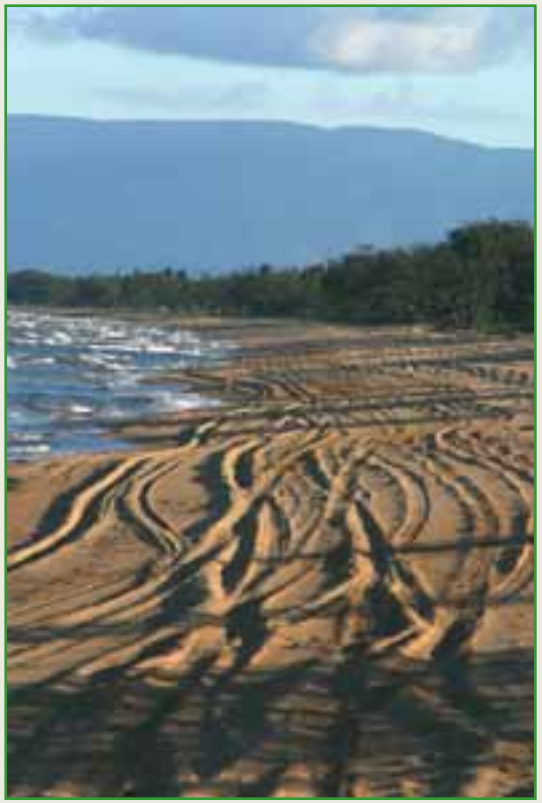
- Originally established as a Centre of expertise for GIS services to Hinchinbrook Shire Council, CSR, Regional Sugar Industry & Natural Resource Groups.

- In 2009, HRIC established a web-based information portal to deliver geospatial information to the Herbert River community.

ESRI Australia
Putting knowledge into place

Essence of HRIC

- A centre of expertise beyond that which any individual JVP might acquire. Hence, it provides economy of scale.
- A central custodian, on behalf of the community, of information provided by JVPs, clients and other sources.
- A service orientation, neutrality, objectivity and collaborative capacity that transcends the interests of any individual JVP and which creates a culture of willingness to support the whole community.
- A holistic strategic overview that perceives opportunities and facilitates their realisation for community benefit.



HRIC Vision

Balanced and sustainable development

of the Lower Herbert River Catchment

actively supported by the HRIC.

HRIC Objectives

Goal 1: **To establish a GIS web service infrastructure that will support real time access to data and spatial functionality, and efficient acquisition, management and dissemination of information for the Lower Herbert River Catchment.**

Goal 2: To provide leadership and high level technical advice to assist member organizations to make productive use of GIS and associated technologies in support of their business operations.

Goal 3: To improve communication and collaborative processes between members and within the wider community.

Goal 4: To grow the team development and GIS skills capacity of JVPS

Goal 5: To ensure the financial sustainability and best practice governance for the HRIC.

Goal 6: To build awareness in the wider community of the role that GIS and the HRIC can play in sustainable development of the Herbert region.

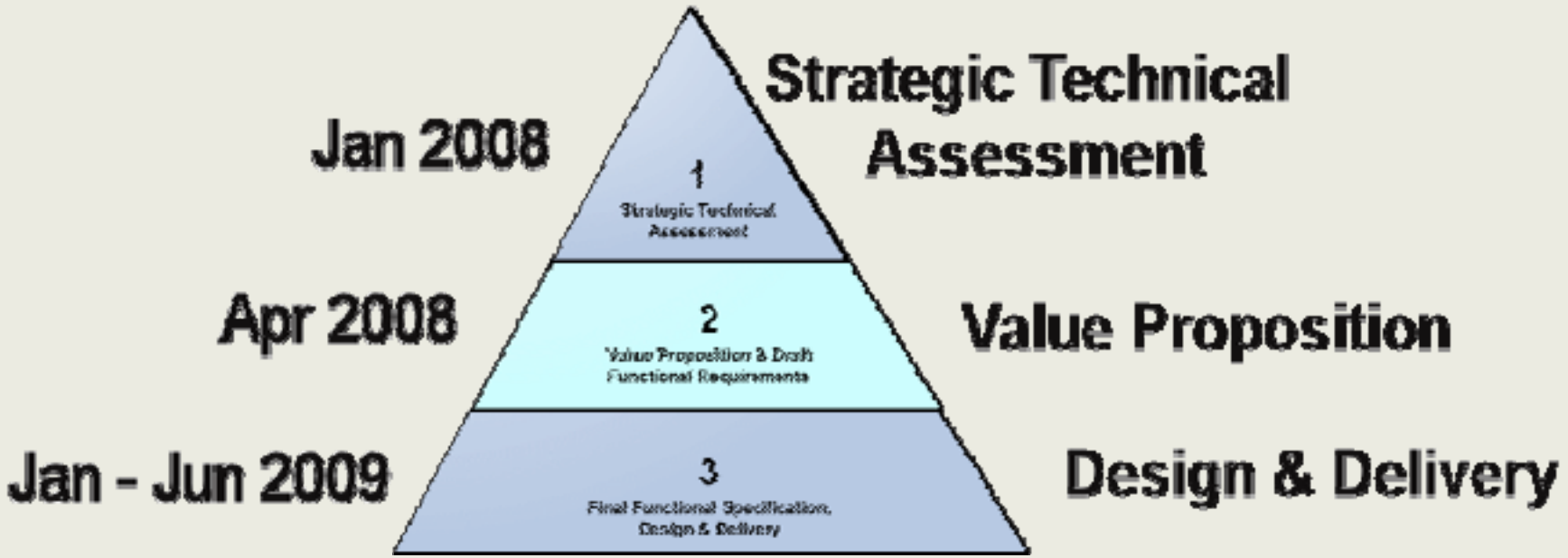
Summary of Objectives

Basically our aim is to improve the quality of decision-making in this community by:

- improving access
  to relevant information
- improving the capacity
  to use that information
- identifying opportunities
  for working together across a community

Enterprise GIS Strategy and Process

HRIC Strategic Plan



Sugar Industry Uniqueness

High level of interdependence – but not vertically integrated (except for milling and transport)

Sao Martinho Brazil (St Martin Mill) – completely vertically integrated.

- 5-6 million tonne (80-90 tonne p ha average)
- (also two 9 million tonne farms in other regions).
- 45 harvesters (7 groups)
- 2 tractors – 3 haul – outs
- cane transported by 350 trucks
- own planters and fertilising

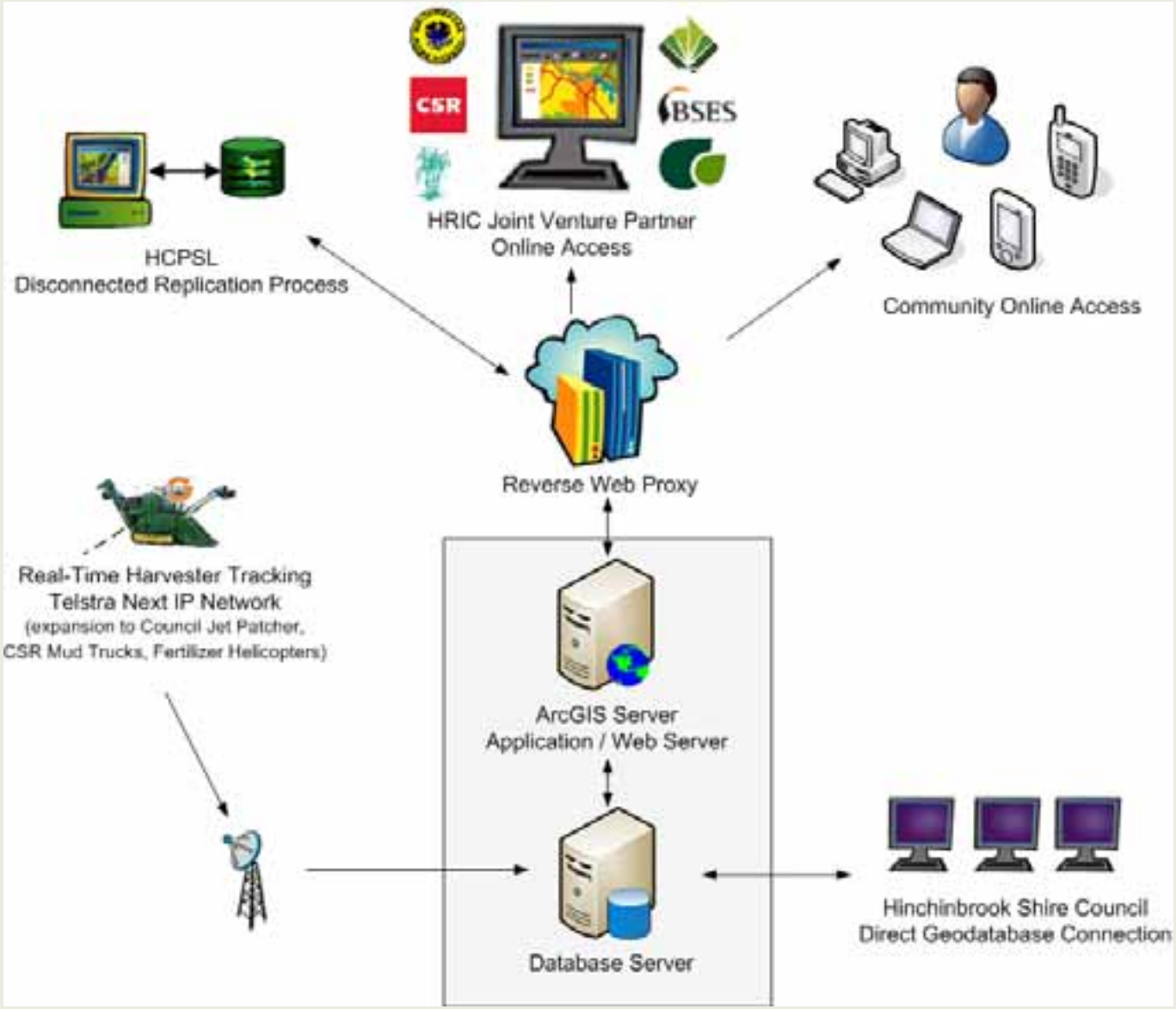
We have:

- Herbert (5 million tonne)
- 2 mills (one owner) who owns transport
- 74 harvesters (separate businesses)
- c. 680 (870 assignments) growers
- 15 Planters and fertiliser contractors

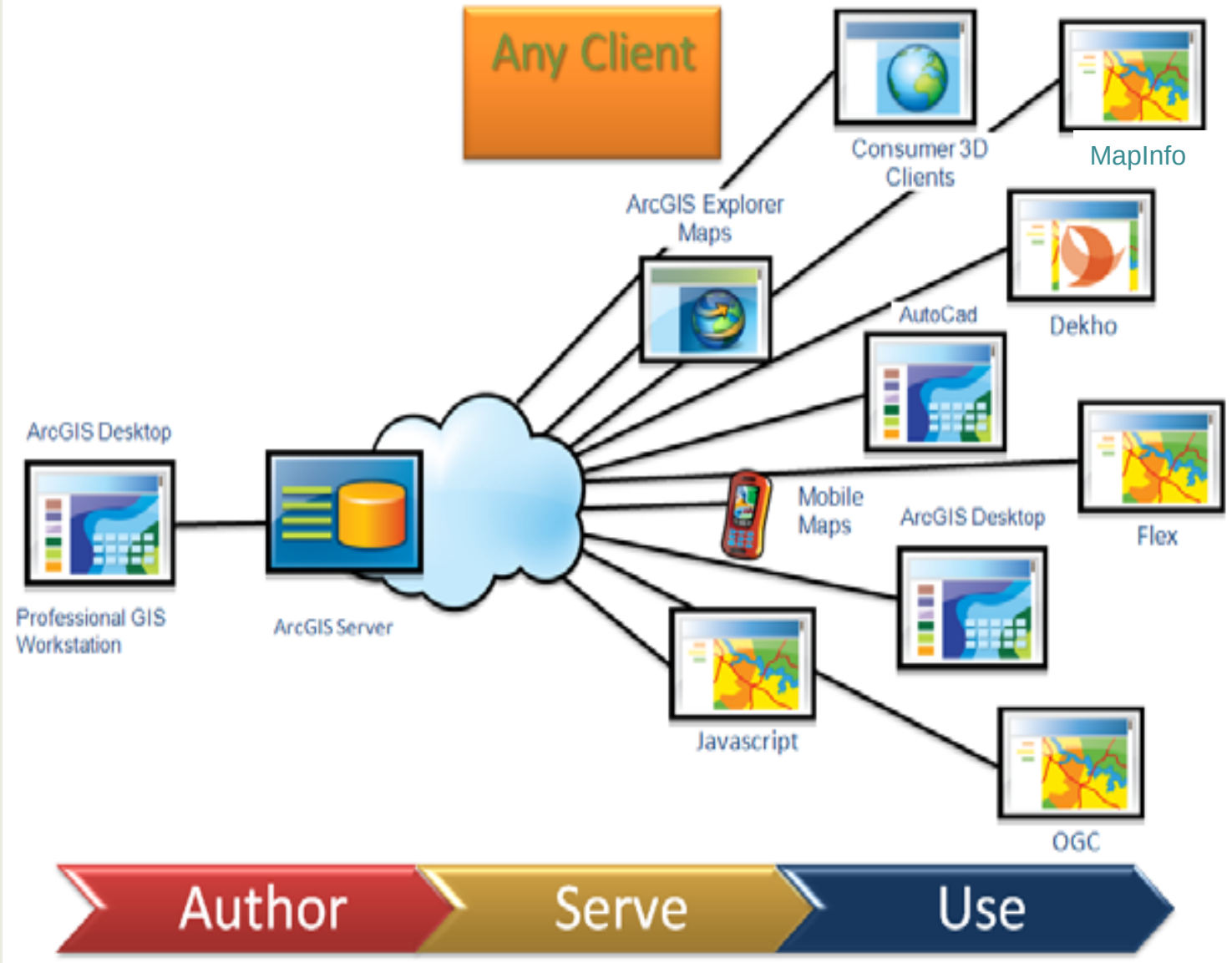
What we have achieved

- Established an Enterprise GIS Solution tailored to our partner's requirements.
- Developed a sophisticated and elegant information management infrastructure
  - Herbert Geospatial Data Library
  - Herbert Information Portal (web portal)
- Cane Mapping and Management system
- Real-time Cane Harvester monitoring system
- Cane Harvest Management System
- Cane Consignment error trapping
- Cane Yield Monitoring System
- Reef Rescue Portal for terrain NRM
- CSR Rail Safe Integration
- Pest and weed portal
- Local government geospatial migration strategy
- Local government and community 'portals' – floods, assets, town planning, etc
- Local government financial and property connection and portal
- Mill Mud, Aircraft, LG 'JetPatcher' real-time tracking and monitoring system
- Increased GIS software availability (across Internet)

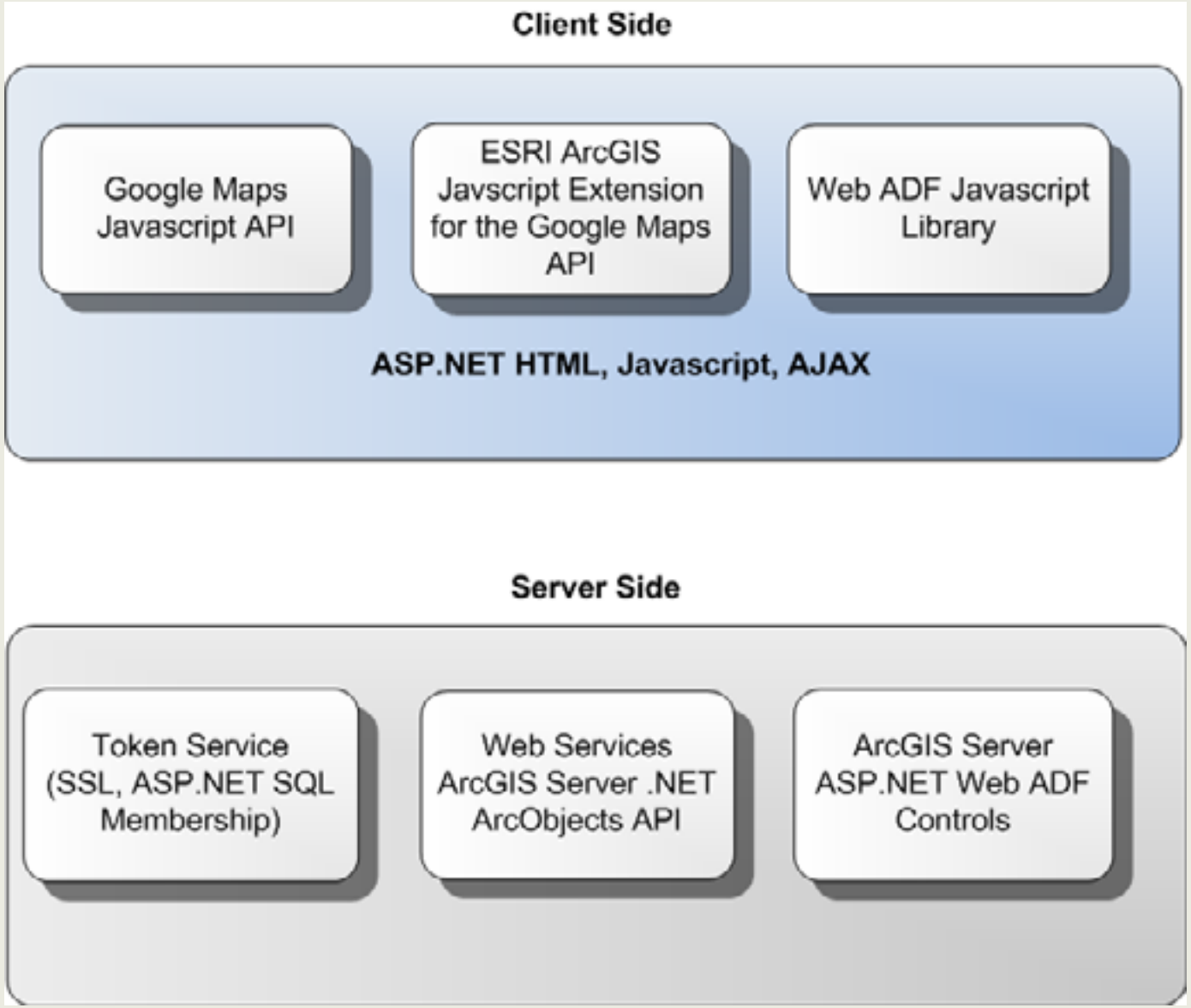
System Architecture



Power in Simplicity



Technology


Client Side
Google Maps Javascript API
ESRI ArcGIS Javscript Extension for the Google Maps API
Web ADF Javascript Library
ASP.NET HTML, Javascript, AJAX
Server Side
Token Service (SSL, ASP.NET SQL Membership)
Web Services ArcGIS Server .NET ArcObjects API
ArcGIS Server ASP.NET Web ADF Controls

Physical Hardware

PDU		PDU
	Network HUB	
Spare Rack Space		
HRICWEBPROXY DMZ (Network Security Server)		
HRICLSFAPPSVR (Application / Map Server)		
HRICLSFSQLSVR (Database Server)		
MSA2012 Database Storage		
MSA60 Backup Storage & HRIC Network Drive		
UPS (Uninterruptible Power Supply) ERM (Extended Run Time Module)		
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COTS vs. Open Source

Regional "Out of the box" Benefits

"Single common interface"

- designed to maximise business/industry efficiency within the region

Online Community / Grower Interface

- to allow community to enter data directly from home (for free !)

OGC Compliant Services (WMS & WFS)

- to extend services to a variety of GIS / CAD applications, including Google Maps, AutoCAD & MapInfo

Powerful, Simple & Effective

Expected: more expensive in first years, then cheaper later on

Outcome: cheaper in the short and medium term, and much cheaper in the long term

Critical Success Factors

1. Matching system to business requirements.
    a. Strategic Plan
    b. Strategic Technical Assessment
    c. Value Proposition
    d. Project Mandates
    e. Not a functional requirements document with large ‘thud value’

2. Collaboration and cooperation.
    a. HSC IT support
    b. JVP technical skills
    c. Environment of trust and cooperation
    d. going it alone was not really an option

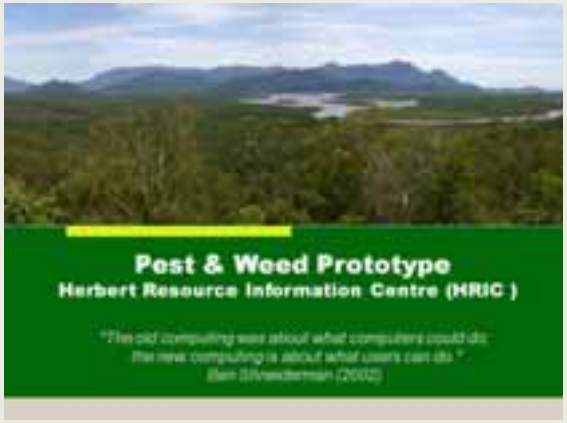
3. Using COTS solution

Challenges

- Lack of power or authority over JVPs
- Keeping up with JVP requirements and managing expectations
- Getting in place core policy and support elements
- Having the Board and decision makers understand the technical elements of the system, without losing them
- Systems being built (due to external pressure) for stakeholders who do not contribute resources to the system
- Little time thus far spent on standards, policies, etc.
- Technology not the limitation – it's the business models to support it that's the challenge

Video Demonstrations

Herbert Information Portal Overview



Pest & Weeds Portal Extension

Questions ?