# Traffic Volume Information System (TVIS-II)

Use of a Functional Performance Specification (FPS)

## Project Reflections

# Project Background

- Existing software suite out of date
  - Some did not run on Win2000 platform
- Knew other systems were out there
  - How to compare them to our needs?
  - What were our needs?
- Knew business re-engineering was taking place
  - System development/procurement to lead re-engineering - OOPS
  - Could not wait for re-engineering - OOPS

# Project Background

- Broken into two stages
  - System Requirements Gathering and review of Off-the Shelf Systems
  - Procure or develop new system

# TVIS_II - Stage I - FPS

- Consultant Assignment
  - Develop FPS
  - Use FPS to
    - Evaluate COTS
    - Evaluate Systems Used by other Road Authorities
  - Review traffic data collection and Processing Methodologies
    - Recommend process changes that could improve efficiency/accuracy

# TVIS_II - Stage I - FPS

- Developed FPS
  - Two 3 day workshops
    - Users of the system
    - Users of the data
    - An external consultant
    - External road authority
  - One on One meetings
  - Fine tuning with Regional/HO Staff – 2 months

# Typical System Development Project in MTO

- IT works with business to develop Requirements Document – i.e. preliminary design
  - Data models, relationship tables etc
- IT develops a Design Document
  - Process flow charts etc
- Based on “Business needs it now” approach
  - System often enters development phase before overall design is complete

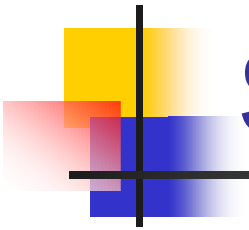
# Typical System Development Project in MTO

- Business Analysis
  - can tend to focus on solutions and leaves little room for creativity on the design side
  - not always done in a structured format with the right questions asked
  - tends to focus on how the process is performed now
    - **What** is done may be asked rather than **How** is it done and **Why** is it done
      - Result is **true** needs may not be addressed

# Typical System Development Project in MTO

- As development proceeds
  - Users see potential and ask for process changes
  - New processes can develop from the use of technology – *But is it a real users "need"?*
- Due to time pressures system is often developed in modules
  - As each module is developed, design for the next one begins and changes to the first one may be required
  - Not an integrated design tends to be difficult to maintain and less robust

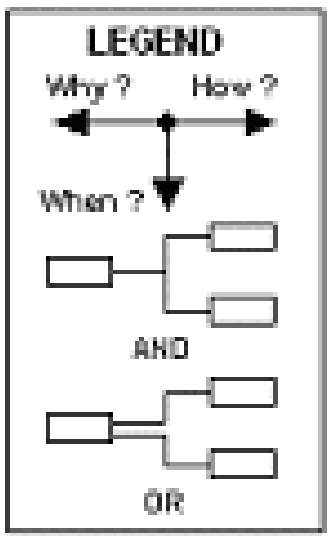
# Reviewing Off the Shelf Systems

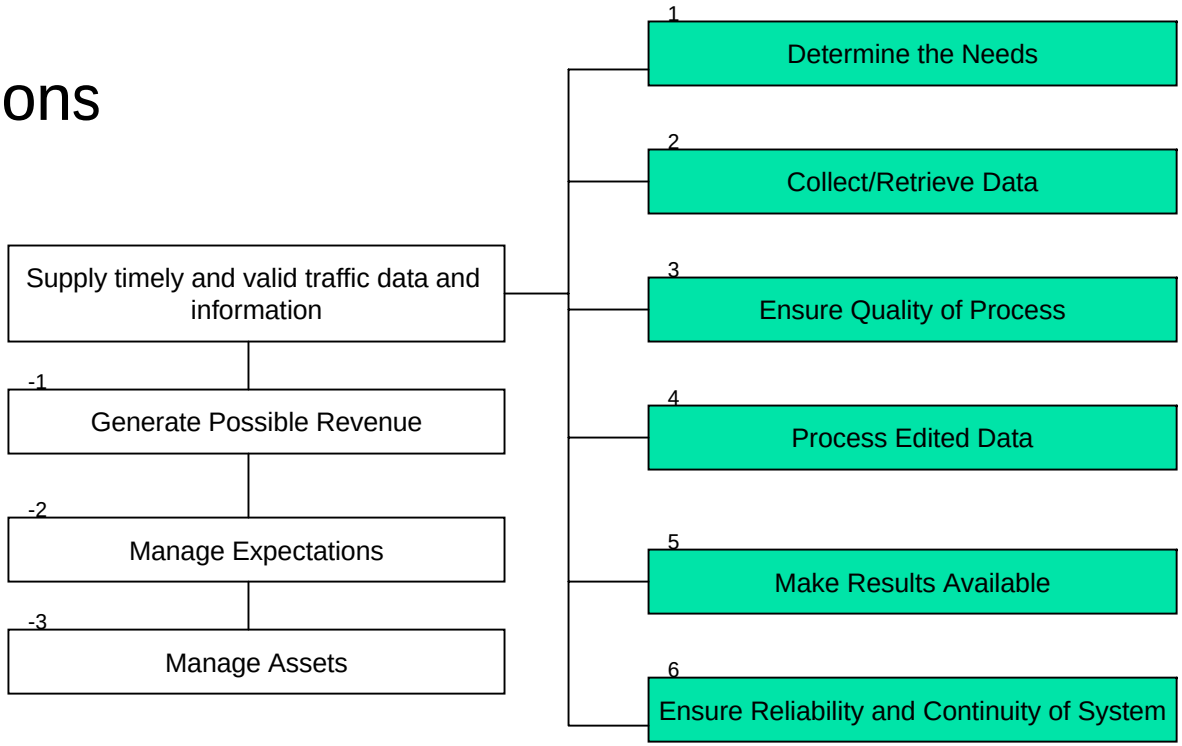


- Develop requirements
  - Compare systems to requirements
- Problem:
  - How do you know when a system meets a requirement?
  - To what level must a requirement be met?
  - What flexibility does the user have in a requirement being met?
  - All answered by the FPS but not by preliminary design document

# TVIS_II - Stage I - FPS

Functional Tree
TVIS_II
Primary Functions



# FPS benefits realized

- Identified duplication of functions
- Identified functions no longer required
- Raised questions about how business was performed Why? And When?
- Led to requirement of a VE study to make decisions on business process changes

# TVIS_II - Benefits of FPS

- Allowed us to better compare COTS (characterized functions)
- Ensures Business Analysis identified the true needs of the business not a wish list.
- Helped to define the mission of the system
- Provided the business with a document that identified business processes for knowledge transfer in the future

# TVIS_II - Benefits of FPS

- Justified technical requirements identified and identified only what is really necessary
- Provided an excellent feeder document for the PHIMS RFP Traffic Volume component
- Gave IT consultant a document to start with when doing a preliminary design
  - IT can convert customer requirements identified in FPS into technical requirements
- FPS can provide added info during Design Stage
  - QC can test system components against requirements identified in the FPS
  - Can help identify use cases

# TVIS_II - Drawbacks of FPS

- Takes considerable time up front by the business
  - Can be offset by reduced change requests to IT during development
- Requires workshops and coordination of stakeholders
  - However, it gets buy in from users
- Must ensure right people are in the room
- Not many skilled facilitators in FPS at this time

# TVIS_II - Lessons Learned

- RFP should be specific in level of detail required for FPS
  - General level for reviewing COTS
  - More detailed if intention is to develop system
- Strong Facilitator required
- Business should consider a value engineering workshop as part of the process if re-engineering of business processes are envisioned or identified during FPS development

# Lessons Learned

- Does not replace “IT” requirements for more detailed analysis and a design document prior to system development

- Is a first step in an IT project performed by the business but with IT at the table