

Impact of Operational Contracts on Maintenance of a Modern Bus Fleet in South Africa

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Agenda

- BRT Contracts vs Commuter Service Contracts
 - Maintenance Impact of Different Contracts
- Fleet Standardisation
 - Benefits and Risks
- GABS Case Study
 - Fleet Standardisation
 - Supplier Partnership
- Proposals for Future Contracts
 - Ideas for Lowest Cost Contracts



BRT Service Contract

- Based on a Fixed Time Table
- Split Responsibility → Increased Complexity
 - Operations → Contractor A
 - Control Centre → Contractor B
 - Fares Collection → Contractor C
 - Maintenance → Contractor D
 - Stations → Contractor E
 - Marketing → City
 - Asset Owner → City



BRT Service Contract

- Tender Specification for Vehicles
 - Based on Applicable Case Study?
 - Employees with Required Operational Experience?
 - Role of Consultants in Development?
- Best Capital Cost or Life Cycle Cost?



Commuter Service Contract

- Based on Fixed Kilometers
- Single Responsibility → Minimize Complexity
- Operator Responsible For:
 - All Operational Systems
 - Personnel
 - Fares Collection
 - Maintenance
 - Marketing
 - Providing Vehicles



Commuter Service Contract

- Vehicle Specification Development
 - Employees with Operational Experience
 - Supplier Relationships / Supplier Partnerships
- **Standardisation!**
- Best Life Cycle Cost



Fleet Standardisation

- New Generation Vehicles are Complex and Provide Complex Challenges
- Strong Correlation Between:
 - Level of Fleet Diversity
 - Level of Management and Maintenance Challenges



Benefits of Standardisation

- Maintenance Efficiency
- Special Tools
- Training
- Warehousing and Spare Parts
- Operational Efficiency
- Supplier Relationships
- Reliability



Maintenance Efficiency

- New Generation Vehicles → Increased Complexity
 - Especially Electronic Systems
- Steep Learning Curve for Staff
- Efficiency = Function of Training and Experience
- Standardised Fleet Leads To:
 - Reduced Mistakes
 - Reduced Repair Times
- Improved Efficiency



Special Tools

- Sophisticated Testing Equipment and Special Tools
- Periodic Software Updates and / or Subscriptions
- Recurring Cost and Expensive Cost
- Standardised Fleet Leads To:
 - Spread Cost Over More Vehicles
 - Reduce Cost [cpk]
- Improved Efficiency



Training

- Some People Say
 - “I do not want to train my people, because after they are trained they leave”
- Imagine The Alternative
 - “You do not train your people and they stay”

Author Unknown



Training

- Complex Vehicles = Increased Training Requirements
- Recurring and Expensive Cost
- Standardised Fleet Leads To:
 - Spread Cost Over More Vehicles
 - Reduce Cost [cpk]
- Improved Efficiency



Warehousing

- Standardised Fleet Leads To:
 - Reduce Stock Holding Demands and Related Costs
 - Provide Opportunities for Volume Discounts
 - Provide Opportunities for Special Delivery Agreements
 - Reduce Risk of Being Out of Stock

- Improved Efficiency



Operational Efficiencies

- Standardised Fleet Leads To:
 - Reduce Float / Spare Unit Demands
 - Improve Float / Spare Unit Availability
 - Reduce Downtime

- Reduce Number of Different Lubricants
 - Reduced Risk of Incorrect Product Being Used

- Improved Efficiency



Supplier Relationships

- Standardised Fleet Leads To:
 - Suppliers Effectively Become Partners
 - Effective Pricing Agreements
 - Effective Volume Forecasts
 - Effective Delivery Agreements
 - Effective Payment Agreements

- Improved Efficiency



Reliability

- All Suppliers Promise Reliability
- Historical Data is Accurate Measure of Reliability
- Standardised Fleet Leads to:
 - Reliable Historical Data
 - Reliable Trend Analysis
 - Accurate Schedule for Preventative Maintenance
 - Simplified and Accurate Future Cost Estimates
 - Improved Confidence
 - Improved Efficiency



Risks of Standardisation

- Standardised Fleet Leads to:
 - Reduced Competition or Loss of Competition
 - Cannot Apply the Theory
 - “3 quotations lead to best price”
 - Technological Breakthrough
 - Technological Breakthrough by Standard Supplier’s Opposition
 - Risk of Design Flaw in Standard Supplier’s Product
 - “Lemmon Effect”
 - Excessive Downtime

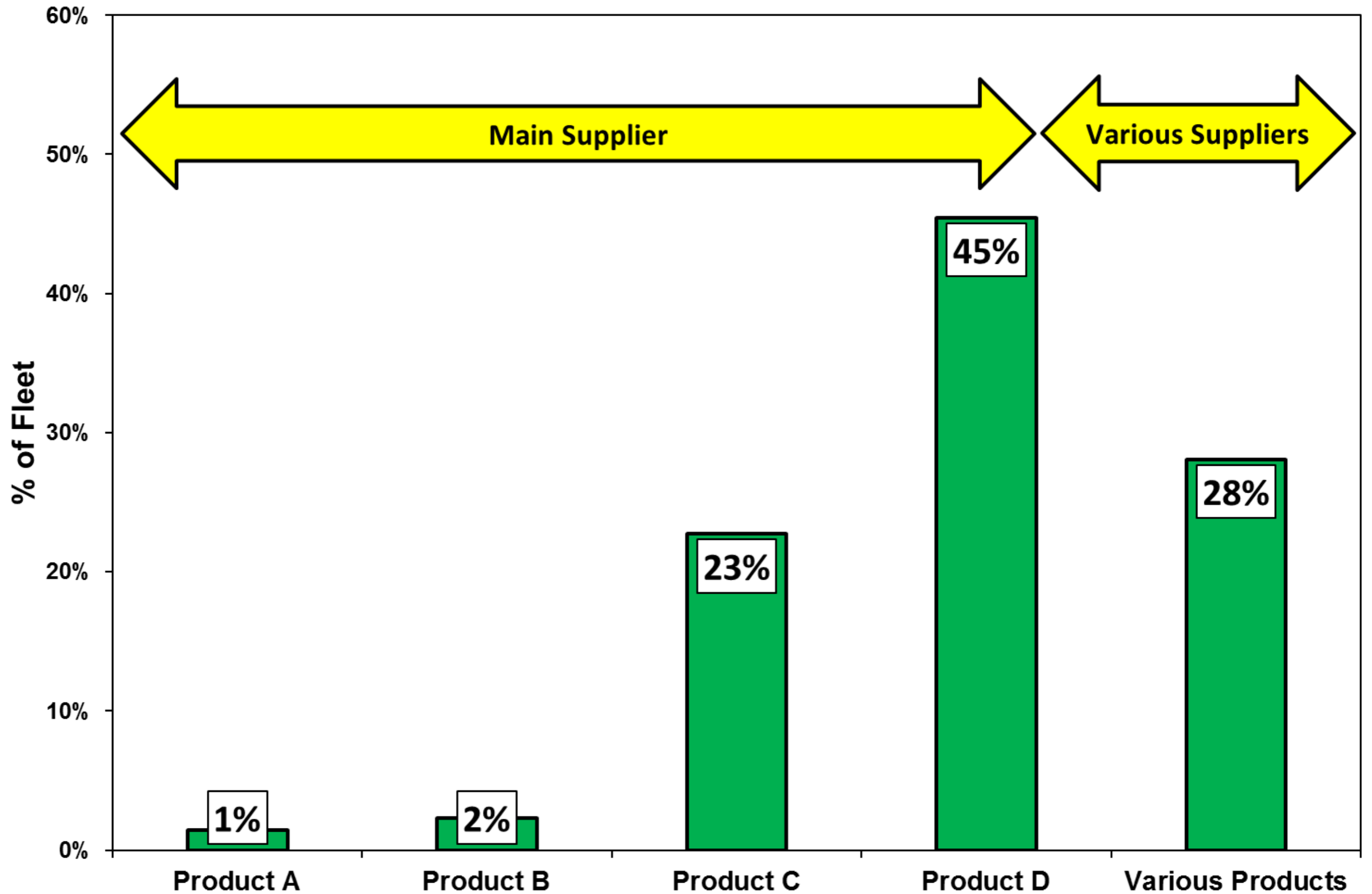


GABS Case Study

- Fleet Standardisation
- Supplier Relationship or Partnership



GABS Fleet Mix



Benefits of Partnership

- New Model Development
 - Substantial Input from GABS
 - All Maintenance Disciplines Involved
[mechanical, electrical and body]
 - Various Levels of Maintenance Employees Involved
 - Various Levels of Operational Employees Involved
- → Suitable Bus for Relevant Contract
- → Suitable Bus for GABS



Benefits of Partnership

- Training
 - Supplier Trainer Available for Agreed Periods per Year
 - Train GABS Training Instructors and Key Personnel
 - In Cape Town → Minimise Costs
 - Create Core Group of Higher Skilled Employees
 - Improved Knowledge Management
 - GABS Trainers and Core Group Train All GABS Employees
 - 50 Apprentices Included in Training



Benefits of Partnership

- Maintenance “In-Sourced” at GABS
- Annual Accreditation Audit by Supplier
 - Un-Announced
 - Ensure Adherence to Quality Standards
 - Improve Confidence for GABS and Supplier
- Reduce Costs
- Increase Control of Operation



Benefits of Partnership

- All Bodies Built in 3CR12
 - Rust Resistant
 - Minimal Increase in Capital Cost
 - Reduce or Eliminate Body Rebuilds
 - Reduce or Eliminate Downtime
 - Reduce Life Cycle Cost



Benefits of Partnership

- Spare Parts
 - Effective Volume Forecasts
 - Effective Stock Holding
 - GABS Keep 1 Week's Usage [high volume items]
 - Supplier Have Maximum of 7 Calendar Days to Deliver
 - Automated Weekly Report Showing
 - Outstanding Orders and Days Outstanding
 - Apply Lean Manufacturing Principles
 - Move Small Quantities Often, Not Large Quantities Irregularly
 - Improve Supply Chain Efficiencies



Benefits of Partnership

- Fuel Consumption
 - Approximately 30% of Operational Costs
- Combined Projects to Determine:
 - Optimum Vehicle Setup
 - GABS Operational Environment
 - Substantial Fuel Efficiency Improvement
 - Substantial Cost Savings



Current Contracts

- Too Complex
- Government Owns Vehicles
- Government Overregulate to Protect Assets
 - Increased Costs
- Limited Standardisation
 - Increased Costs



Proposal for Future Contracts

- Ideas for Future Contracts to Reduce Costs
- Future Contracts Should:
 - Allow Operators to be Entrepreneurial
 - Allow Operators to Utilise Operational Experience
 - Allow Operators to Utilise Maintenance Experience



Proposal for Future Contracts

- Government to Provide:
 - Infrastructure [roads, dedicated roads, bus lanes]
 - Legislation [rules of the game]
 - Specification of Services [frequency, service levels]
 - Minimum Specification of Buses

- ?



Proposal for Future Contracts

- Operators to Provide:
 - Required Service
 - According to Legislation and Schedule
 - Buses
 - According to Legislation and Specification
 - Reduce Capital Demand for Government
 - All Related Processes
 - [personnel, fares collection, maintenance, etc.]
 - Single Responsibility for Required Services



Summary

- Public / Private Partnership Leads to Lowest Cost
- Public Transport When:
- Government Responsible for Rules and Infrastructure
 - Operators Responsible for Operations and Assets



Thank You!!

Questions?

