

Migrating an Existing ETC System into a Central System

*Presented by
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Proud Operator of the
Bakwena N1 N4 Toll Road*

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Pt Operational Services (Pty)Ltd

- Operator and Maintainer of the Bakwena N1 N4 Toll Road
- 385 Km of urban regional and national highway centred on Pretoria
- Operator of 17 conventional toll plazas with “boom – down ”
ETC in operation for 10 years.
- Integrally involved in the toll collection system upgrade to become fully interoperable with Sanral’s Open Road Tolling System.

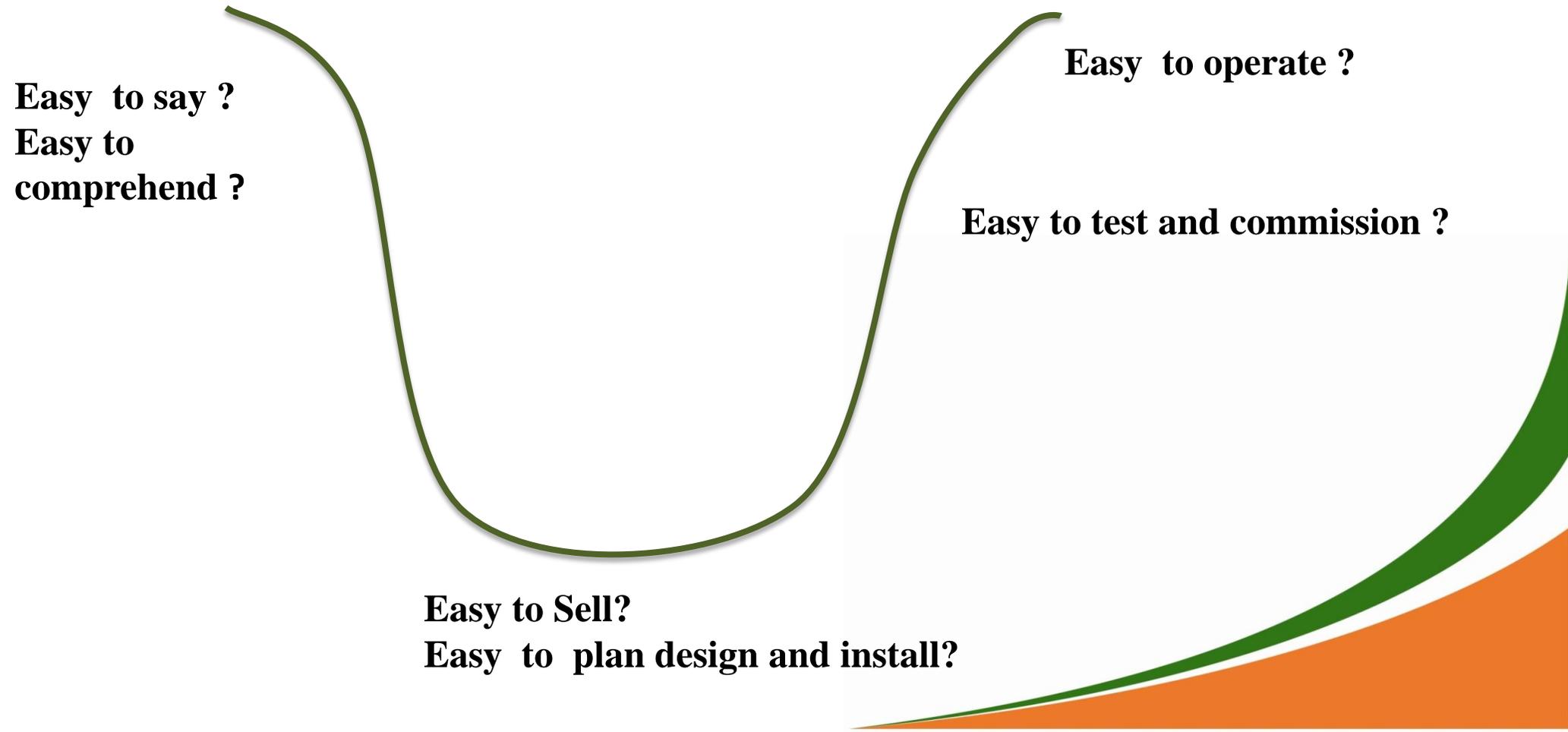
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A ROLLER COASTER FROM CONCEPT TO COMMENCEMENT



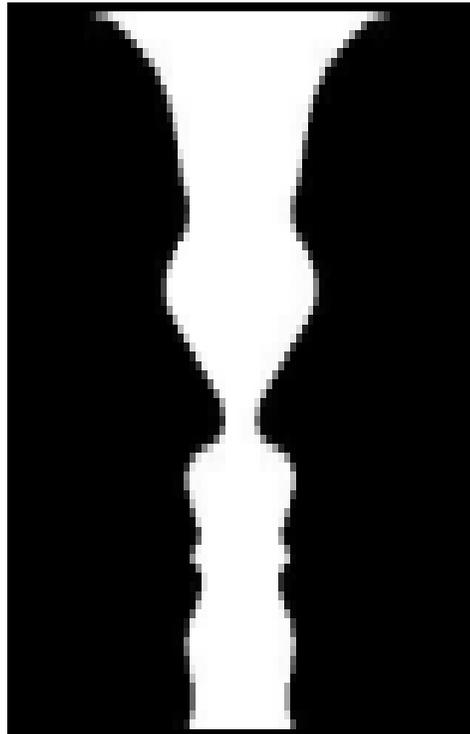
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THE INTERFACE OF INTEROPERABILITY

Bakwena

Pt Operational Services

Sice (Spain)



Sanral

ETC

Kapsch (Austria /Sweden)

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INTEROPERABILITY CHANGE AGENTS

Bakwena
Pt Ops
Sice (Spain)

Sanral
ETC
Kapsch

Existing System
customised for Sanral

Business Rules
System Definition
System Design
Installation
Testing
Commissioning
Switch on
Refinements
Interoperability

Proven System
Customised for Sanral & SA
Customised for Bakwena

POLITICAL
CLOUD

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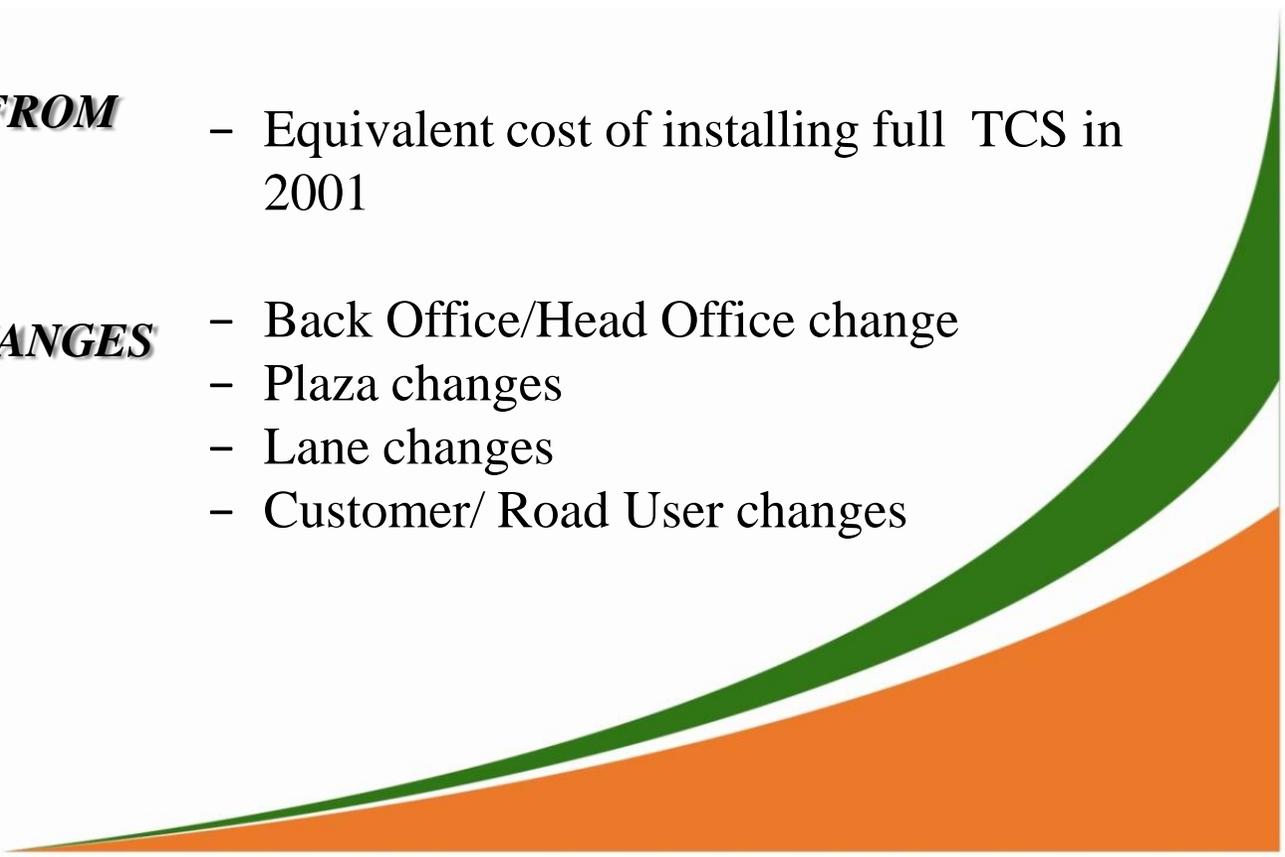
TOTAL SYSTEM PHILOSOPHY CHANGE

- From batch system to real time system

SIGNIFICANT INVESTMENT FROM THE CONCESSIONAIRE

- Equivalent cost of installing full TCS in 2001

OPERATIONAL LOGISTICS CHANGES

- Back Office/Head Office change
 - Plaza changes
 - Lane changes
 - Customer/ Road User changes
- 

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LOGISTICS CHANGES

DATA

COMMUNICATIONS

- WAN and Fibre Optic (?)
- Plaza to HO
- HO to Sanral
- Major multimillion project without ORT upgrade
- Batch system to real time system
- Better, more reliable, more “immediate” system
- Major multi million rand project without ORT upgrade

VALIDATIONS

- Business Rules dictate doubling of validation staff
- Centralised validation (Weekend and all holiday staffing)
- Limited query time

RECONCILIATIONS

- Major reprocessing methods to be established
- Methodology to be understood by all change agents
- Particularly of non-guaranteed payments



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LOGISTICS CHANGES

NEW SERVER INSTALLATION

- Higher capacity
- Quicker processing time
- Greater office space requirement (including UPS and A/C upgrade)
- Maintenance and standby for real time system
- Major multi million rand project without ORT upgrade

ETAG OFFICE LOGISTICS

- Replacement tags for “own” customers
- Staff deployment changes
- Interim promotions



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LOGISTICS CHANGES

OPERATIONS

- Training (collection, admin and technical)
- Staffing (toll collectors deployment)
- Ramp up compared to stable state

SYSTEM SUPPORT

- Maintenance and renewal(philosophy and cost)
- skills resource in the lanes
- Spares inventory

OPERATION COMMUNICATION MANUAL

- Procedures, processes and agreements between Bakwena and ETC
- Operations Bible

CUSTOMER/ ROAD USER

- Tags
 - Charges (and billing)
 - Lane configuration comprehension – further options
 - Social discounts
 - IMSA
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Key to it being possible ...?

MD² LANES

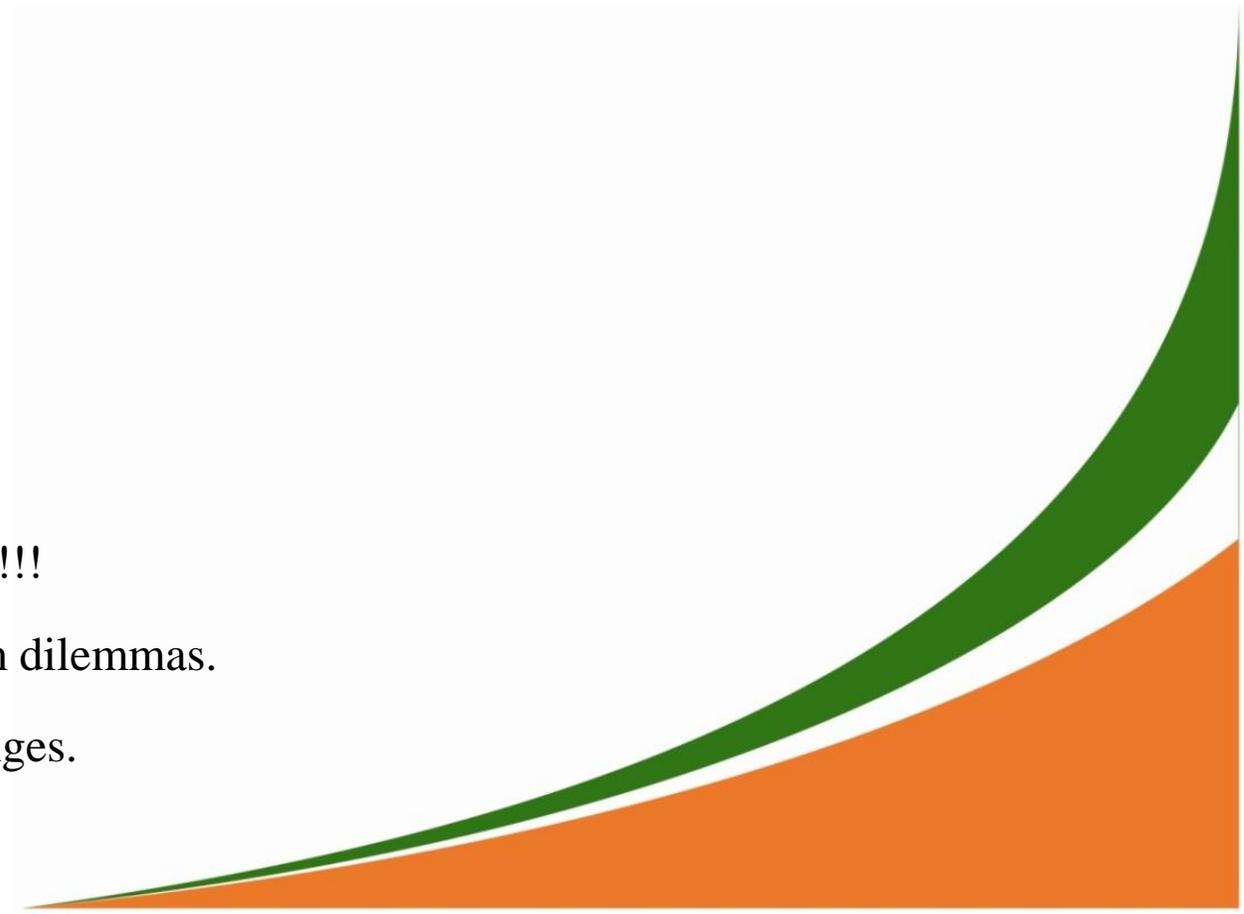
- Manual
- Manual or Dynamic
- Manual and Dynamic
- Manual and Dynamic or Dynamic (MD² - 23!!)



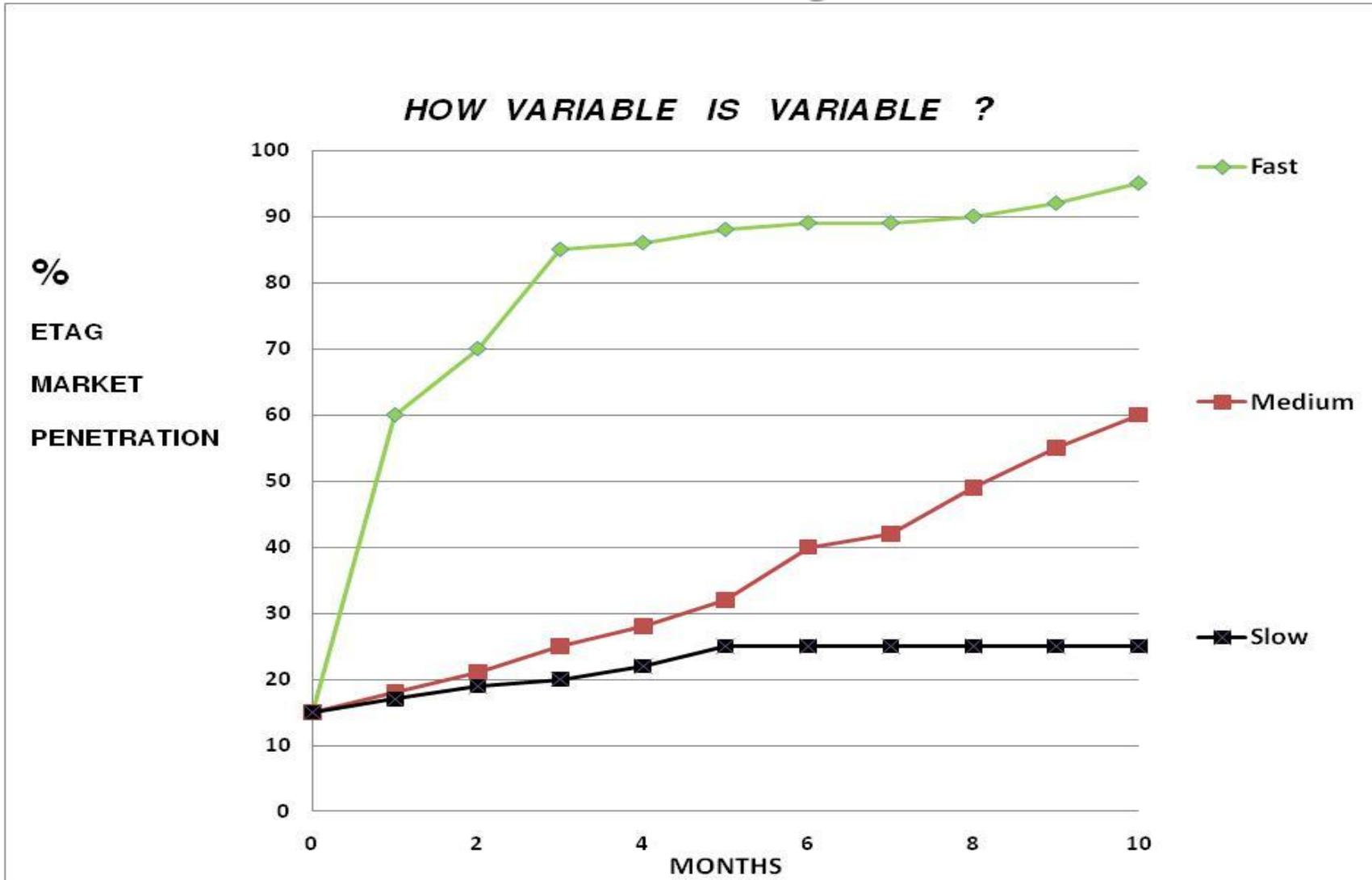
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Key to it being possible ...?

MD² LANES

- increasing etag take up...
 - but at what rate?...
 - during which hours?...
 - in which direction ?...
 - at which plazas?...
 - with what traffic mix?...
 - variabilities in all 6 of the above !!!
 - no design, timing or configuration dilemmas.
 - no costly lane configuration changes.
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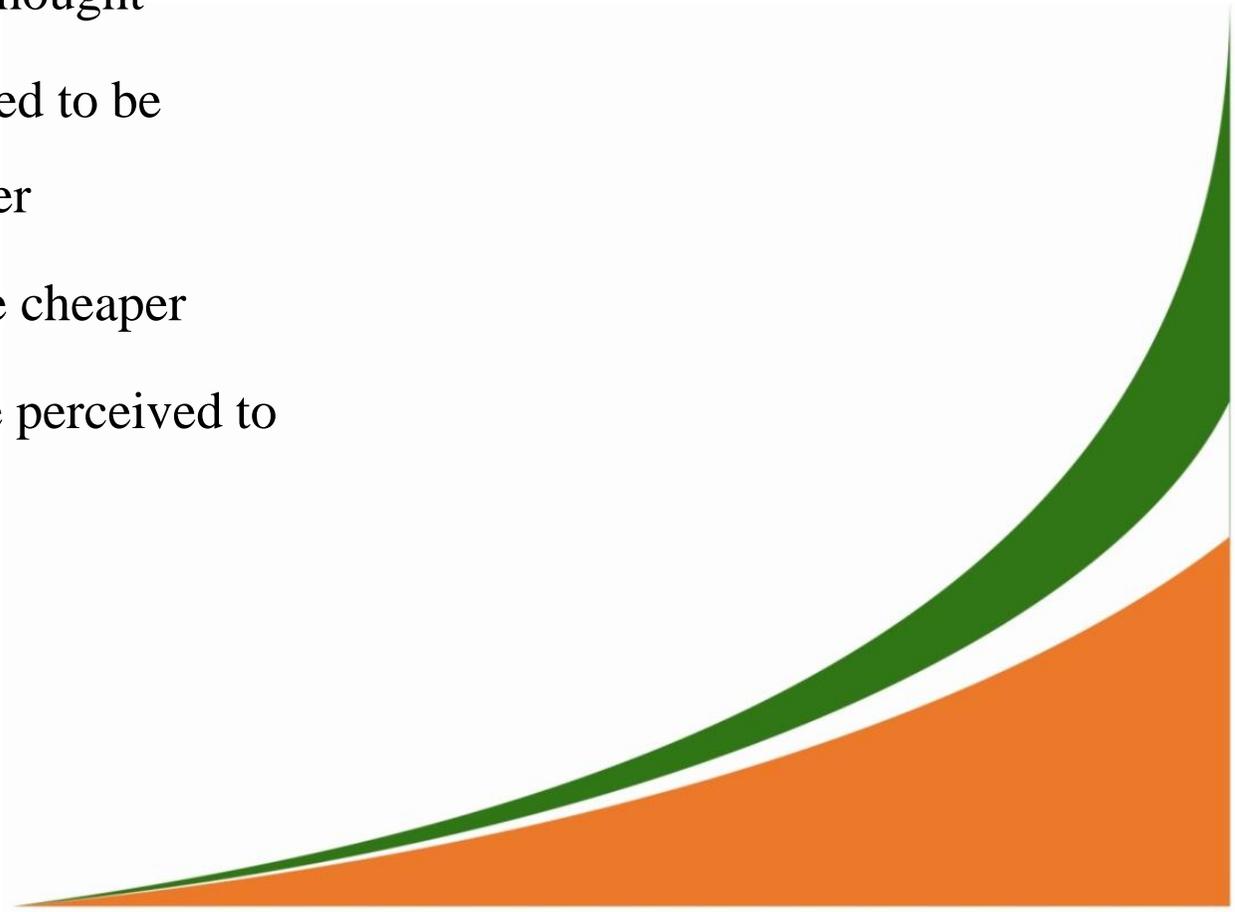
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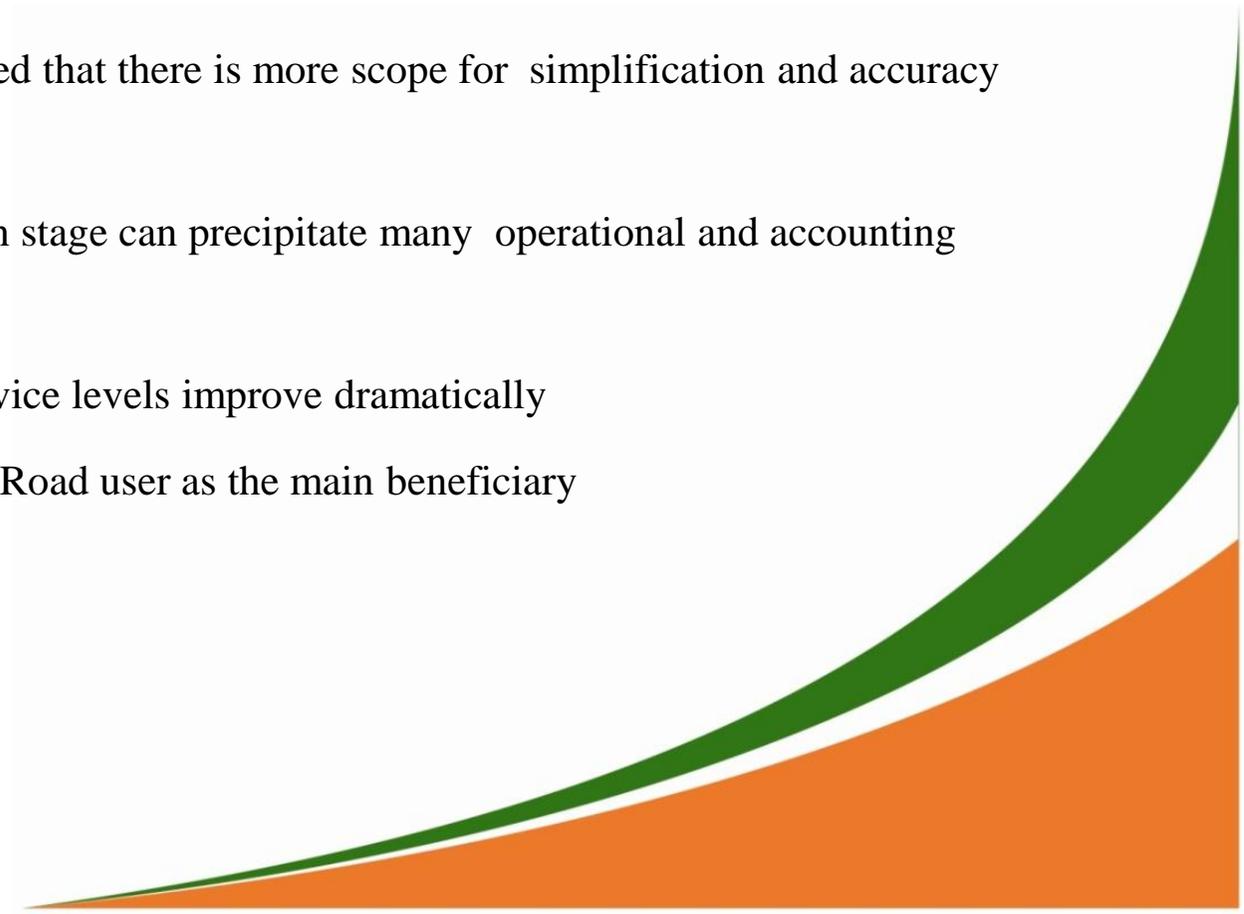
OPERATIONAL REALITIES ?

- The Operator can be an after thought
- ETC interoperability is assumed to be more automated and thus easier
- Operations are perceived to be cheaper
- Maintenance and renewals are perceived to be cheaper



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OPERATIONAL IMPROVEMENTS

- Operators will have a new set of efficiencies to strive for
 - Operating ETC for 10 years has indicated that there is more scope for simplification and accuracy improvements
 - Upgrades on a System change at design stage can precipitate many operational and accounting improvements
 - ETC etag penetration will see plaza service levels improve dramatically
 - Etags and interoperability will see the Road user as the main beneficiary
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SA TEAM TOLLING



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ORT

- *Open Road Tolling*
 - *Ordinary Road Technology*
 - *Ordinary Road Technologist*
 - *Far removed from Rocket Science – pass me my humble pie !!!*
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