

Model Deployment and Management

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ATO

Issues

- ❑ ATO and its Change Program
 - ❑ Analytics and Operational Analytics
 - ❑ Models and Treatments
 - ❑ Challenges
 - ❑ Conclusions
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ATO and its Change Program

ATO

- ATO as a service provider has three basic responsibilities
 - Collect revenue
 - Ensure compliance
 - Provide information and interpretation/judgment on requests from public eg a ruling on whether a proposed investment vehicle is legal from a taxation perspective

 - ATO is responsible for collecting in excess of 90 percent of the revenue for the Federal Government
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ATO

- ATO is a delivery arm and not a policy making organization
 - Treasury develops Fiscal Policy consistent with Government Direction and legislation
 - ATO implements Government Revenue Collection Policies

- ATO is a Federated Organization made up of many business lines eg GST, Superannuation and ICT

ATO

- ATO clients include:
 - Governments – internal and external
 - Media
 - Public

 - Each type of clients has its own needs and expectations

 - ATO is scrutinized 24*7 by the Senate, Treasury, ANAO, Inspector of Taxation, Internal Auditors, Media and the Public
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ATO Change Program

- The Easier, Cheaper and More Personalized Change Program is costing in excess of \$700m and will take until at least 2010 to complete

 - It involves retiring many legacy systems and moving to having a single:
 - Revenue Management System
 - Content and Document Management System
 - Customer Management System
 - Case Management System
 - Work Management System
 - Inbound and Outbound Systems
- } Siebel
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Office of Chief Knowledge Officer's Responsibilities

- Knowledge Management
 - Content and Document Management
 - Information Management and Data Warehouse
 - Reporting System
 - Risk and Intelligence
 - Analytics
 - Operational Analytics
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Analytics and Operational Analytics

Analytics and Operational Analytics

- *Analytics* - Develop classification and prediction models or assessing transactions and taxpayers
 - Not all models developed by Analytics

 - *Operational Analytics*
 - Deploys models into Production
 - 300 plus models are in the pipeline
 - Models used for a number of purposes including Candidate Selection
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Analytics and Operational Analytics

- *Analytics* – is about the use of different modelling techniques to develop modelling solutions
 - *Operational Analytics* – is about deploying models to work in a production environment
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Analytics and Operational Analytics

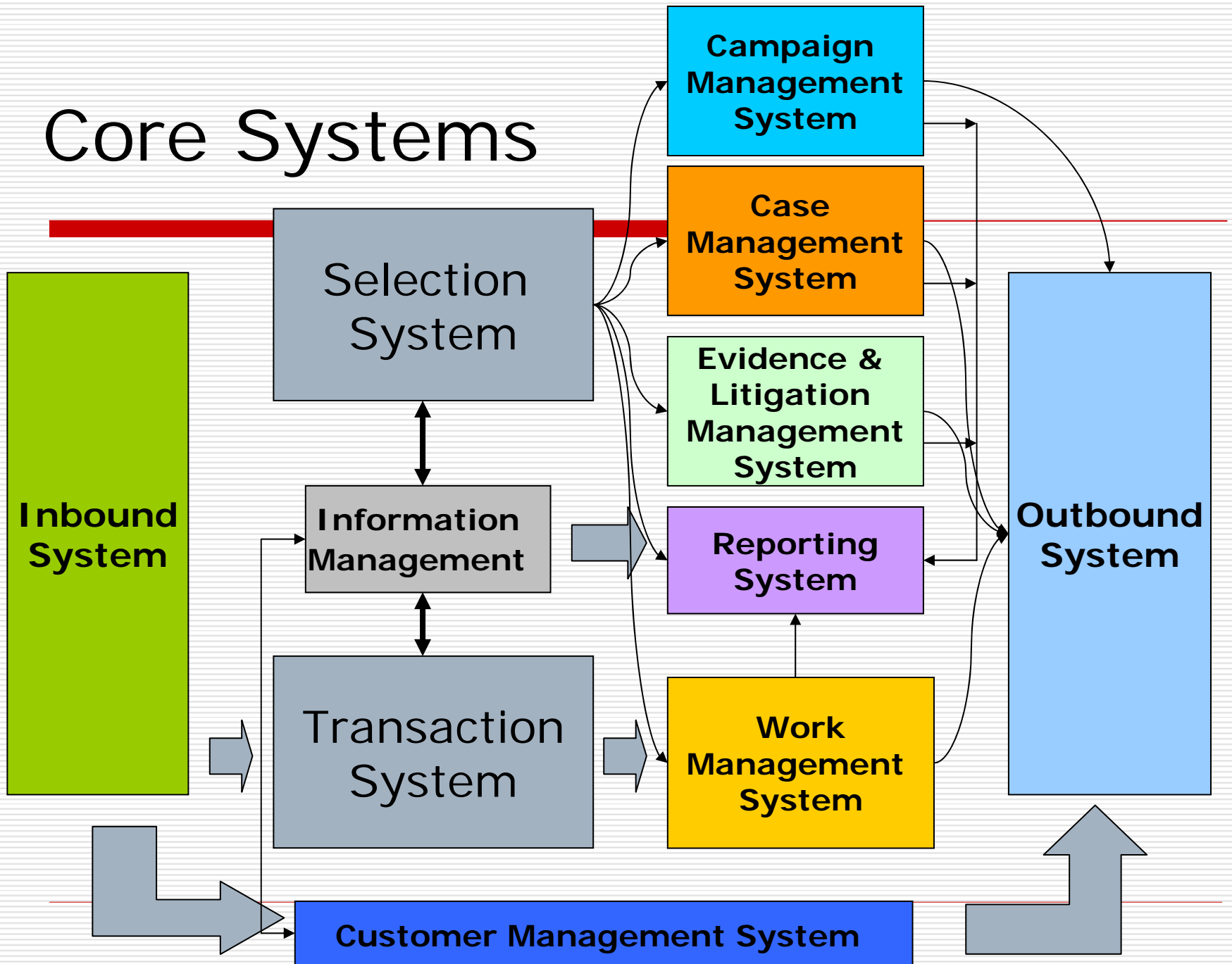
- *Analytics* deals with scientific and developmental aspects of models
- *Operational Analytics* is concerned with engineering and deployment aspects of models
- A key lesson is that what works in a development environment may not be suitable for a production environment

Operational Analytics

What is OA?

- ❑ The OA Unit in the Office of the CKO is the business owner for the Operational Analytics (OA) System
 - ❑ OA System houses models and treatments in a production environment
 - ❑ OA System is responsible for candidate selection for other core components of the Change Program as shown on next slide
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Core Systems



Core Systems

- The previous slide shows a generic architecture that could apply to any organization whether it be a revenue authority, bank or a supermarket chain
 - The basic building blocks include:
 - *Inbound system* that manages mail, telephone calls, cross the counter and other contacts
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Core Systems

- *Transaction System* that processes transactions
 - *Selection System* that selects candidates for campaigns, case management, litigation/prosecution or work management
 - *Customer Management System* for managing queries and complaints from the public
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Core Systems

- *Outbound System* that dispatches mail and manages other organizational contacts with public
 - *Information Management* that collects, stores and provides data, text and imagery
 - *Reporting System* that provides business intelligence required by managers to make decisions
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OA Staff – Key Roles

- Model Architect who assists with the design of model suites that consist of integrated models and treatments
 - Model Engineer who modifies, configures, integrates, tests, implements and maintains models and their treatments
 - Account Manager who assists model owners to manage modelling projects and their documentation
 - Capacity Manager who manages the OA system when it is in production and balances demands so that the system is not overloaded at any point in time
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OA Staff – Key Roles

- *Program Manager* who programs the development of models, schedules their development/deployment and who reports on their progress
 - *Deployment Manager* who manages teams that deploy and maintain models
 - *Support Manager* who assists with the training, documentation and other logistic support required to deploy models into production and maintain them once in service
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Models and Treatments

OA Components

- **Models** these are computational routines that either classify or predict

Model outputs are linked to one or more treatments

- **Treatment** is the execution of a workflow activity (for example, creating a case or sending a letter)

- **Treatment Plans** are business rules that determine which treatments should be applied to a candidate or issue
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Models

- *Transaction Models* – models that classify transactions
 - *Candidate Selection Models* – that select cases for Case Management or Work Management
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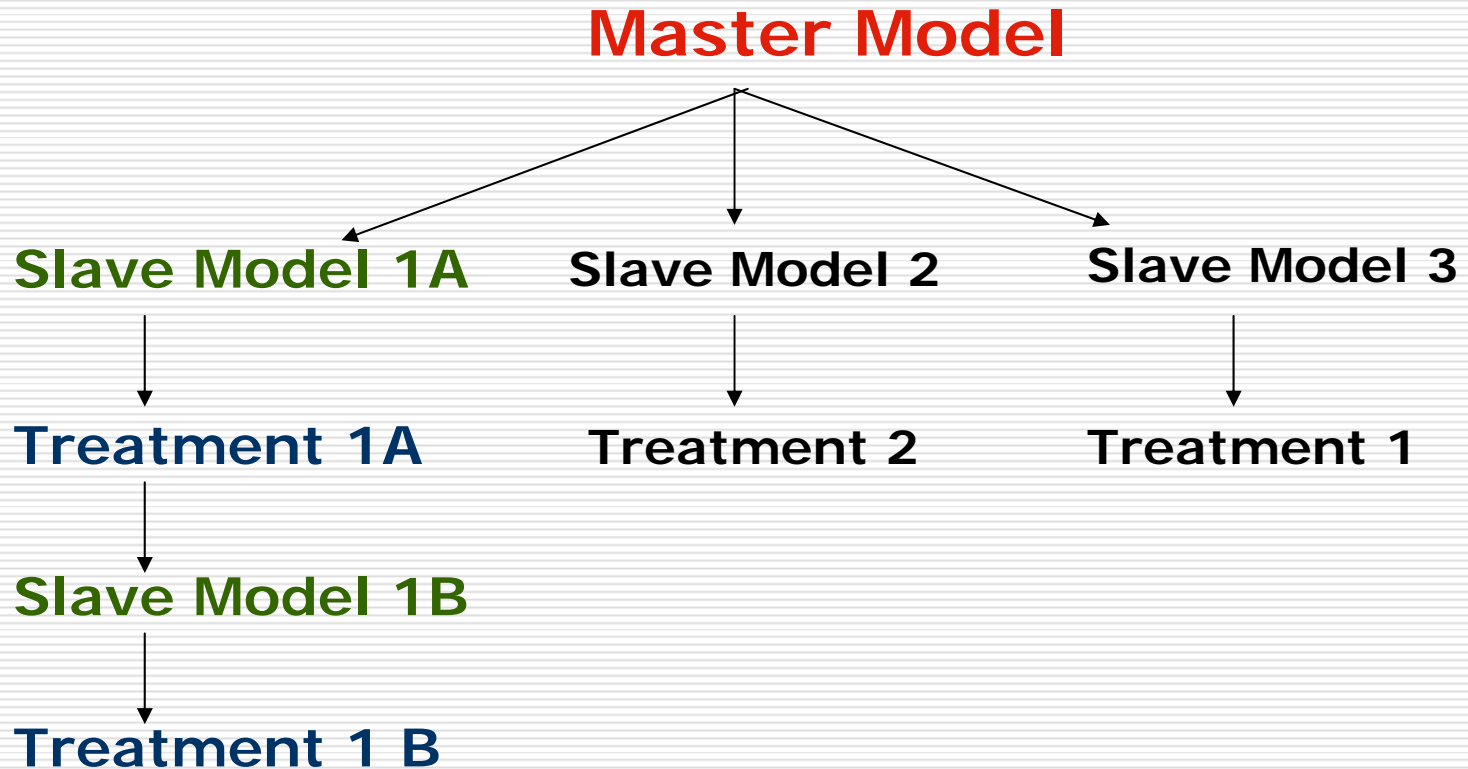
Models

- *Feed Models* – that provide inputs to other business processes such as intelligence analysis
 - *Workflow Models* – that use OA System to manage work activities such as deferring lodgment of tax returns for certain clients
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Master and Slave Models

- Master Models are those that select candidate pools
 - Slave Model are those that select cases from the candidate pool
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Model Suites



Analytical Models

- They are often master models that produce candidate pools

 - They tend to have long life cycles

 - They provide an actuarial basis for case selection based on parameters such as
 - Strike Rate
 - Economic Return
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Analytical Models

- They identify a pool of candidates from the target population which will provide the best return on investment (ROI)
 - That is, staff do not waste time on cases which will have low strike rates and poor economic outcomes
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Lift Chart

