INFORMATION – TECHNOLOGY – INOVATION IN TAX ADMINISTRATION

INLAND REVENUE BOARD OF MALAYSIA

Dr. Marliza Mohamed

OUTLINE

1	HISTORY OF TECHNOLOGY IN IRBM
2	INFORMATION & PROCESS – IMS, INTACTSG, STSc, STSnc
3	DATA WAREHOUSE - REPORTING ANALYSIS – ETP, ReMS, CMS, CRM
4	BASIC ANALYTIC – DMAS & TACS
5	ARTIFICIAL INTELLIGENCE – BIG DATA ANALYTICS (BDA)
6	"REENGINEERING" SYSTEM + ACCRUAL RECORDING-REPORTING + BDA = **HASIL POWER DATA**

ICT INNOVATION

1980-1990s

Information Management System (IMS)

Working with system

Mid - 1990s

Preceding year & formal assesment

INTACT SG

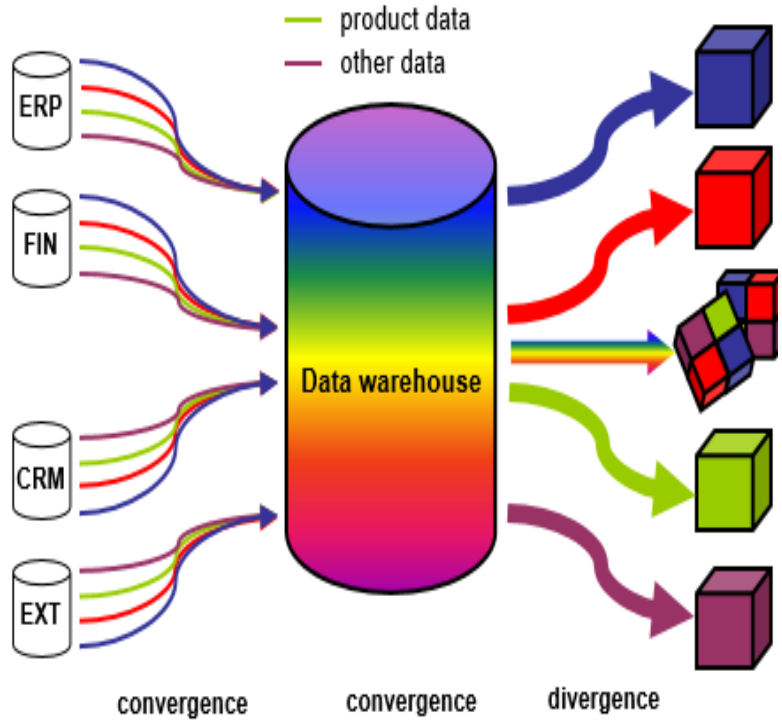
Mid - 2000s

Basis year & self assesment

STS c

STS nc

[2006 – 2008 - 2009 – 2010 ….]

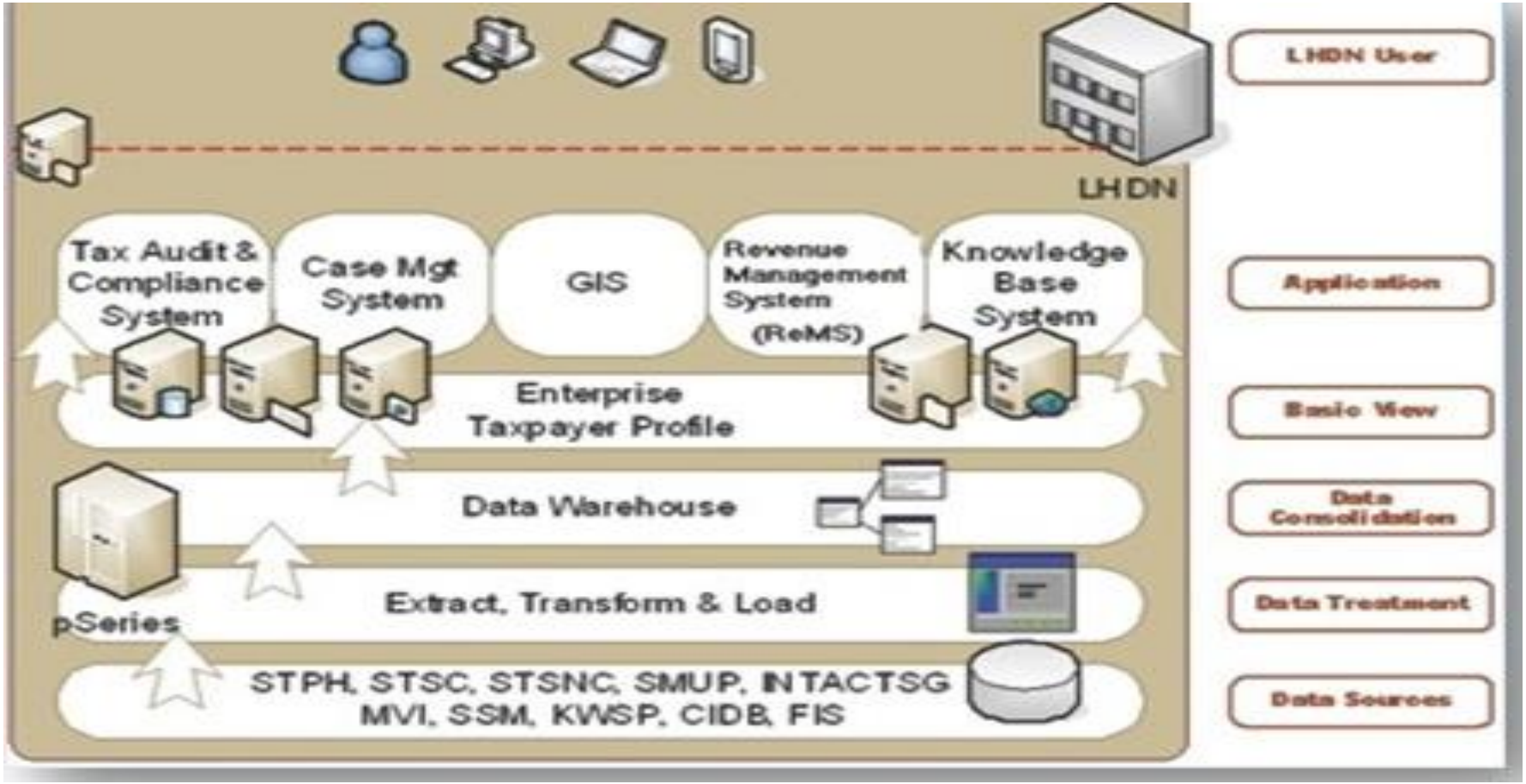


REVENUE MANAGEMENT

SYSTEMS

DEBT ANALYSIS

1. LIST - segmentised -characteristics
2. FLAG – mark for attention
3. REPORT – management decides


LHDN User
LHDN
Tax Audit & Compliance System
Case Mgt System
GIS
Revenue Management System (ReMS)
Knowledge Base System
Application
Enterprise Taxpayer Profile
Basic View
Data Warehouse
Data Consolidation
pSeries
Extract, Transform & Load
Data Treatment
STPH, STSC, STSNC, SMUP, INTACTSG
MVI, SSM, KWSP, CIDB, FIS
Data Sources

TAX AUDIT AND COMPLIANCE SYSTEM (TACS)

Modelling, Profiling, Discovery, Analysis, Visualisation, Reporting

Table maintenance, Server Job Wizard, Database Utilities

TACS relies on Data Warehouse – analyse - extracts relevant facts

ANALYTICS

Enhance LHDN`S capability to detect non-compliance.

Improve efficiency of tax audits - recovering tax loss - increase assessment and revenue

Extraction Facts of Data

Structured data

Form B, BE, D, C

Features:
Alpha
Base
Computed
Derived

2015

DEBT MANAGEMENT ANALYTICS SYSTEM (DMAS)

Subject Matter Expert Team
Human intervention
Predictive Analytic (NBA)
Artificial Intelligent
Machine Learning (modelling)

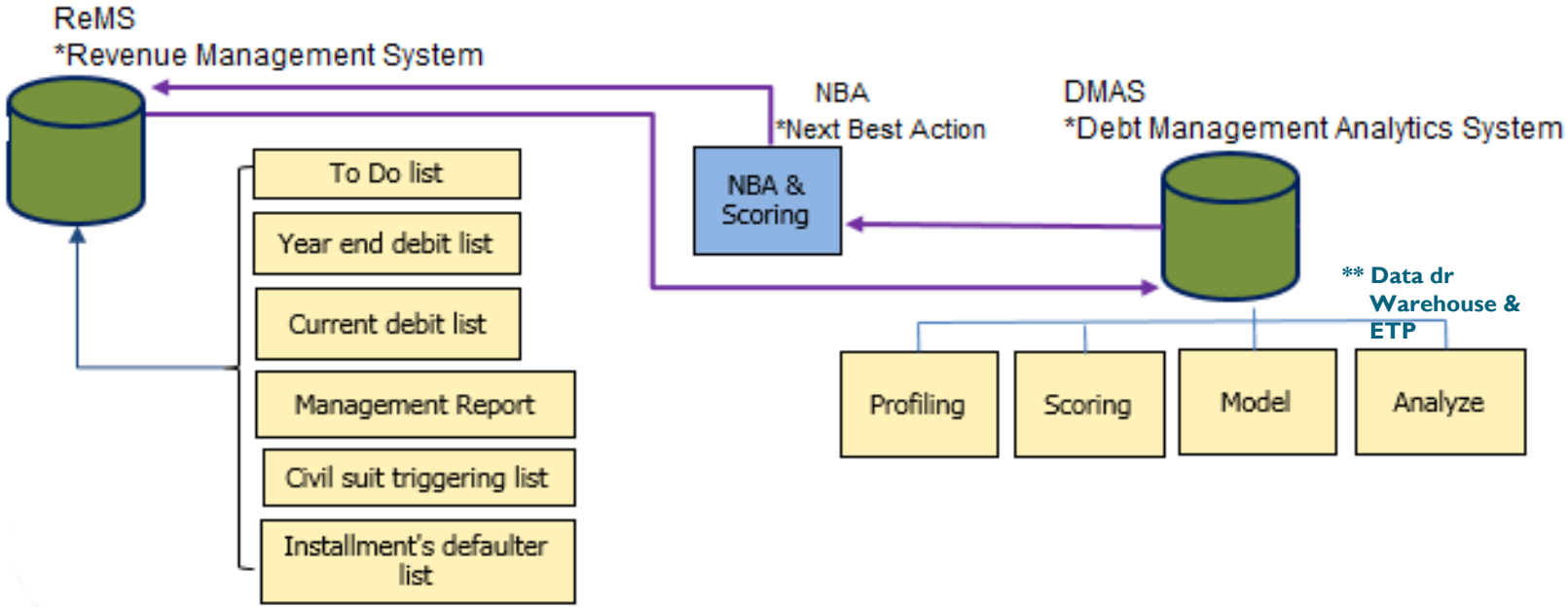
Outcome of debt level:

i. Current debt to Collection: < 5%

ii. Accumulative debt to Collection: < 10%

DEBT ANALYSIS – DEBT ANALYTIC

DMAS + ReMS



DEBT ANALYTIC

Statistical package for Social Science

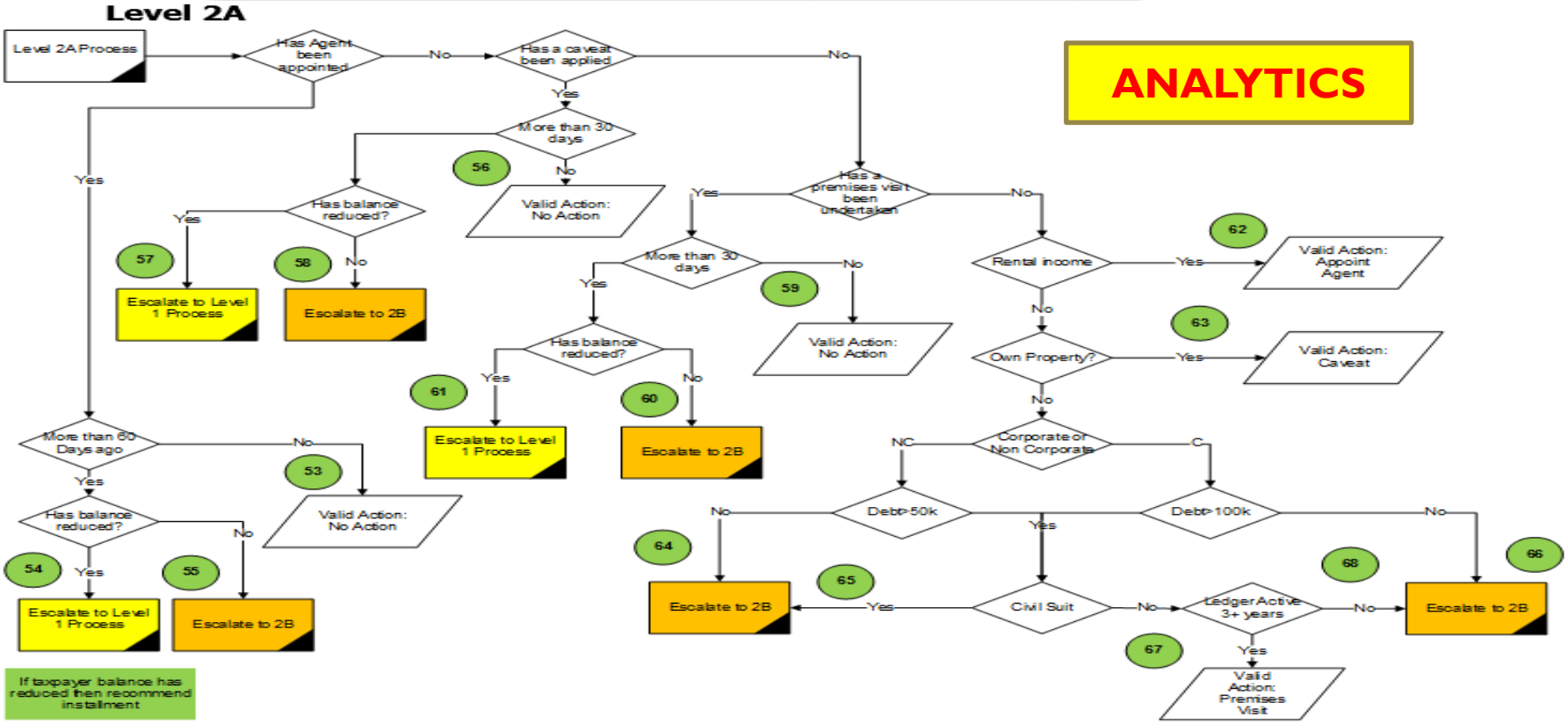
Tax Collection Optimiser Solution

- Construct models
- SPSS :
  - Tax payer information
  - Model *Predictor* (select 6-9 out of 50) – probability risk - scores
- TACOS :
  - NBA - 6 levels - modelling based on collection characteristics

1. Evaluate debt potential
2. Action focused & guided (NBA)
3. Monitors payment

ReMS + DMAS + spss + tacos

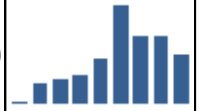
MODEL - STRUCTURE



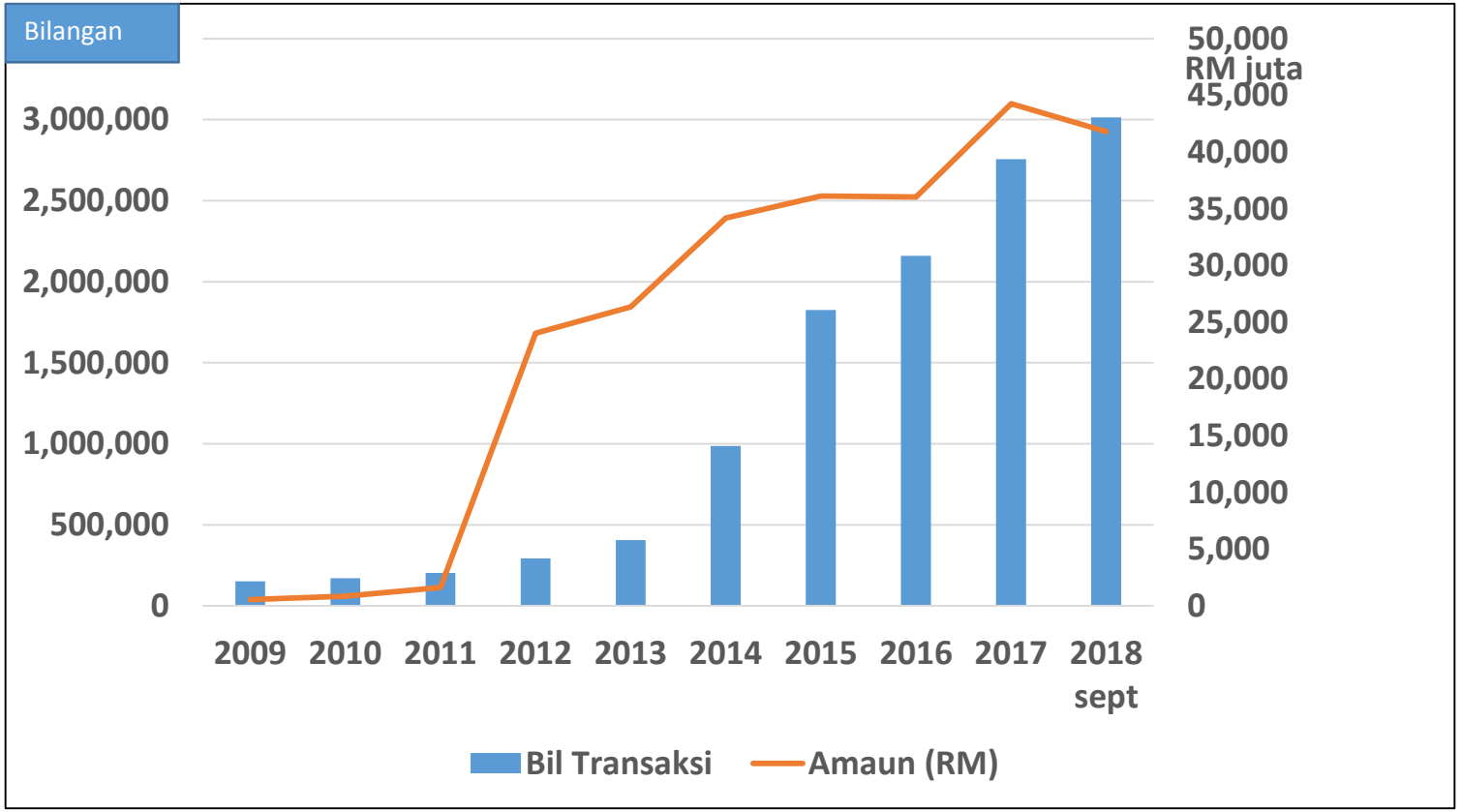
SINGLE-SIGN-ON

Various “e- application”: Registration, Filling, Filing, Calculator, Updating, Payment, Fund Transfer

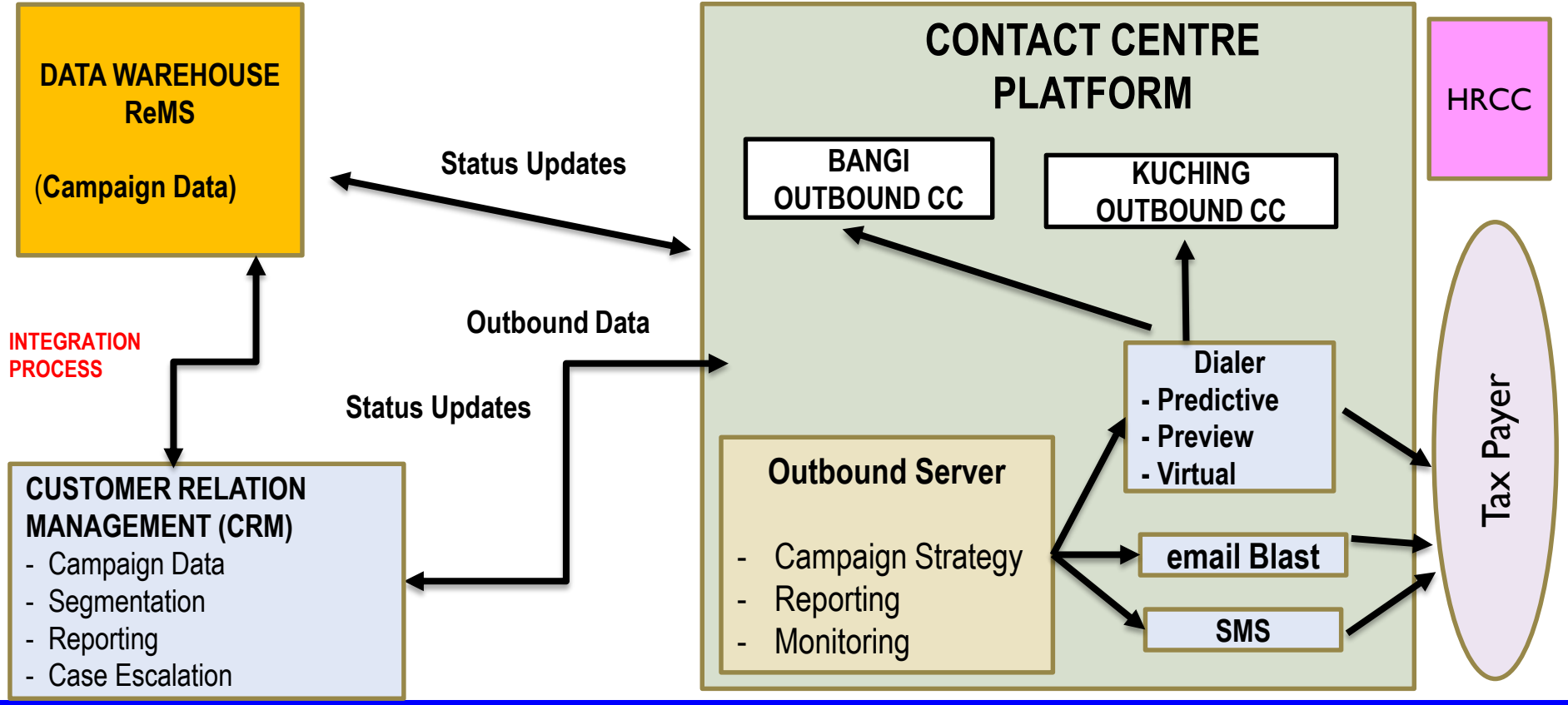
Evidence: SUCCESS STORY OF ELECTRONIC SERVICES

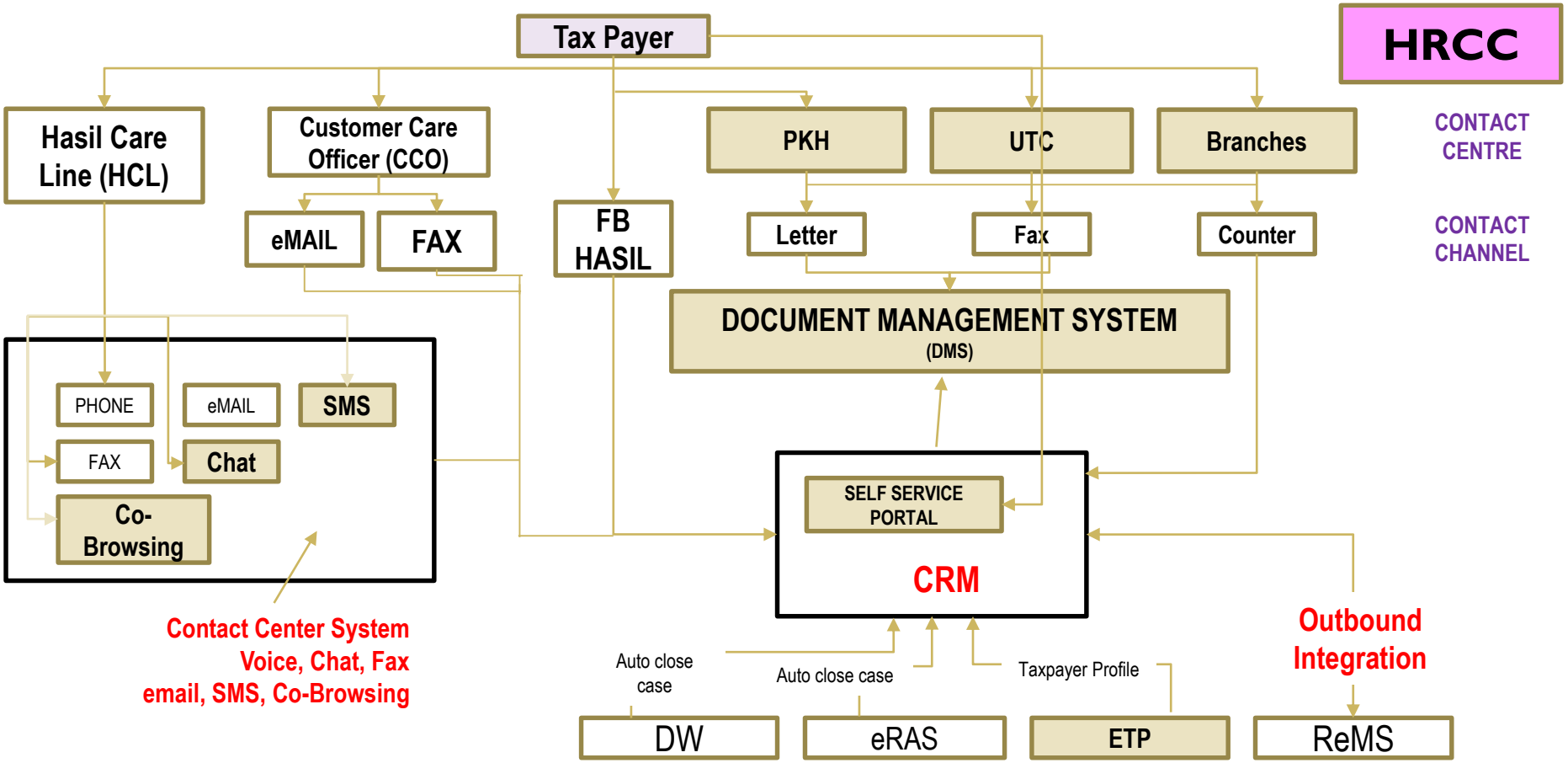
	2010	2011	2012	2013	2014	2015	2016	2017	2018 Aug	
e-Filing	1,975,040	2,356,121	2,859,437	3,257,223	3,807,537	4,166,177	4,426,484	5,360,084	5,541,781	
e-Payment	32,938	39,572	71,447	103,464	99,264	152,172	189,257	321,452	505,803	
e-Daftar	64,638	90,125	95,657	99,887	121,003	189,145	151,143	150,714	125,270	
e-PCB	3,774	20,307	32,873	42,297	67,066	110,555	171,341	259,290	331,184	
e-kemaskini	7,075	10,465	10,499	12,592	14,831	61,834	75,070	103,164	147,309	
eBSHR							27,483,652	29,338,046	56,743,078	
MyTax							2,974,407	3,697,169	3,869,275	

Evidence: SUCCESS STORY OF ELECTRONIC PAYMENT



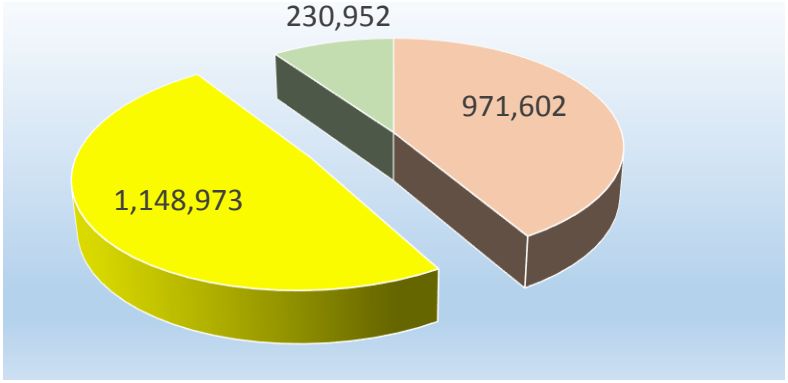
CUSTOMER RELATION MANAGEMENT (CRM)

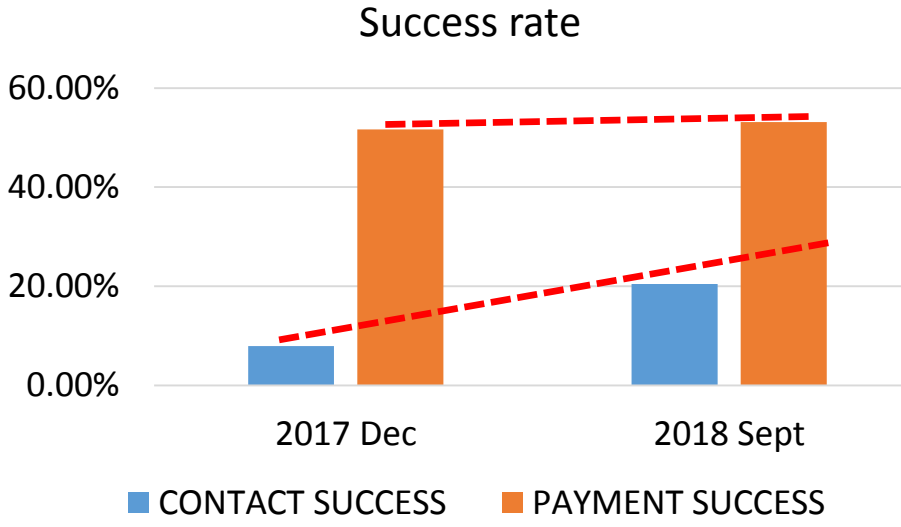



HRCC
Tax Payer
Hasil Care Line (HCL)
Customer Care Officer (CCO)
PKH
UTC
Branches
CONTACT CENTRE
CONTACT CHANNEL
eMAIL
FAX
FB HASIL
Letter
Fax
Counter
DOCUMENT MANAGEMENT SYSTEM (DMS)
PHONE
eMAIL
SMS
FAX
Chat
Co-Browsing
SELF SERVICE PORTAL
CRM
Contact Center System
Voice, Chat, Fax
email, SMS, Co-Browsing
Auto close case
Auto close case
Taxpayer Profile
Outbound Integration
DW
eRAS
ETP
ReMS

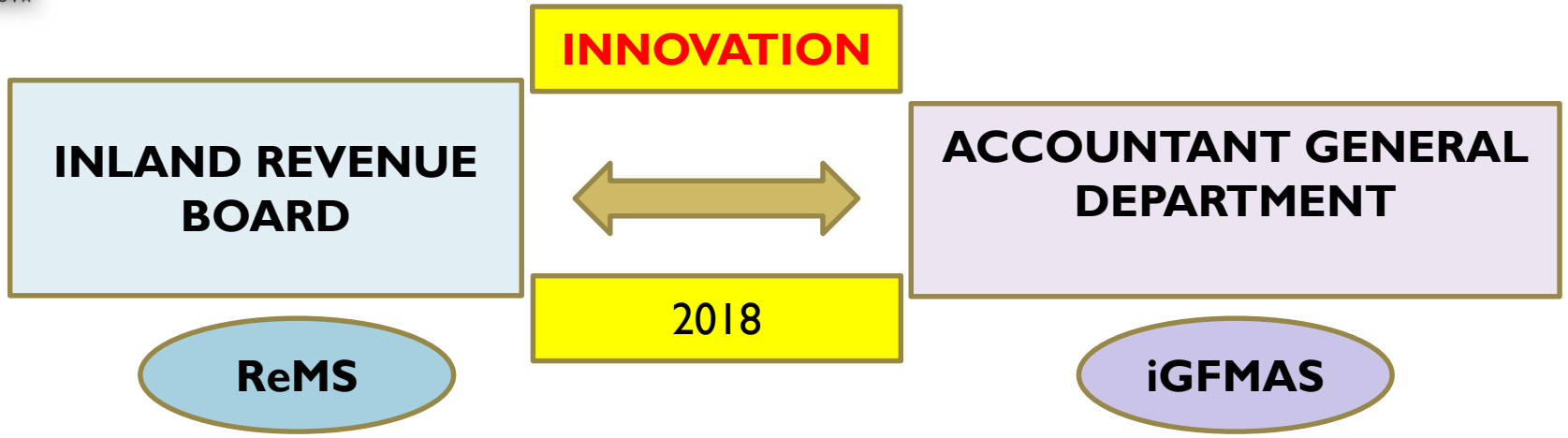
CUSTOMER RELATION MANAGEMENT (CRM)

HRCC





eSIRi – INTEGRATION OF PAYMENT INFORMATION



Evidence of in-house team capability

Online payment information in the form of Journal Voucher between agencies

BDA

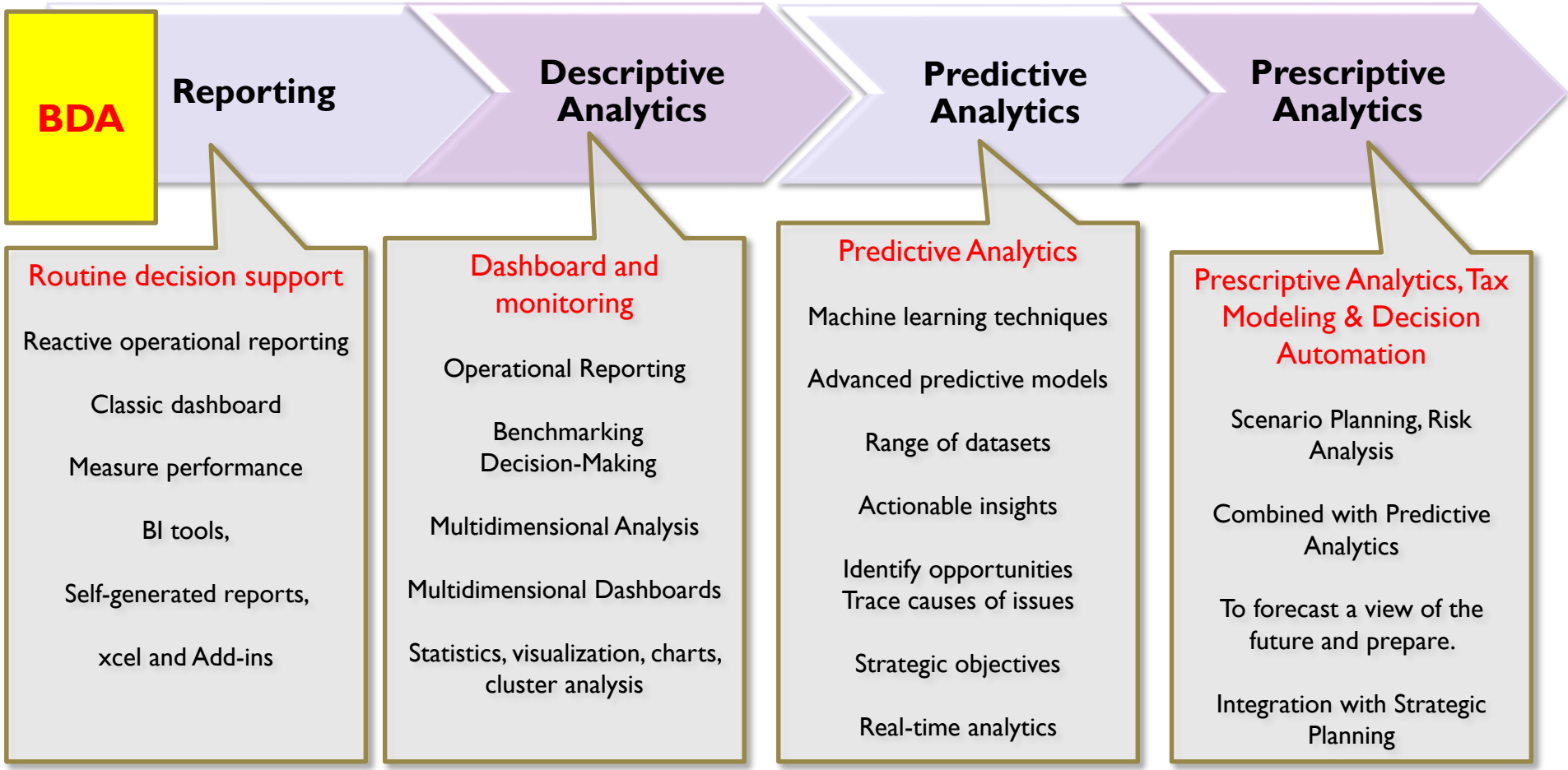
2017….

Agile & Event Triggered

ENHANCEMENT OF APPLICATION

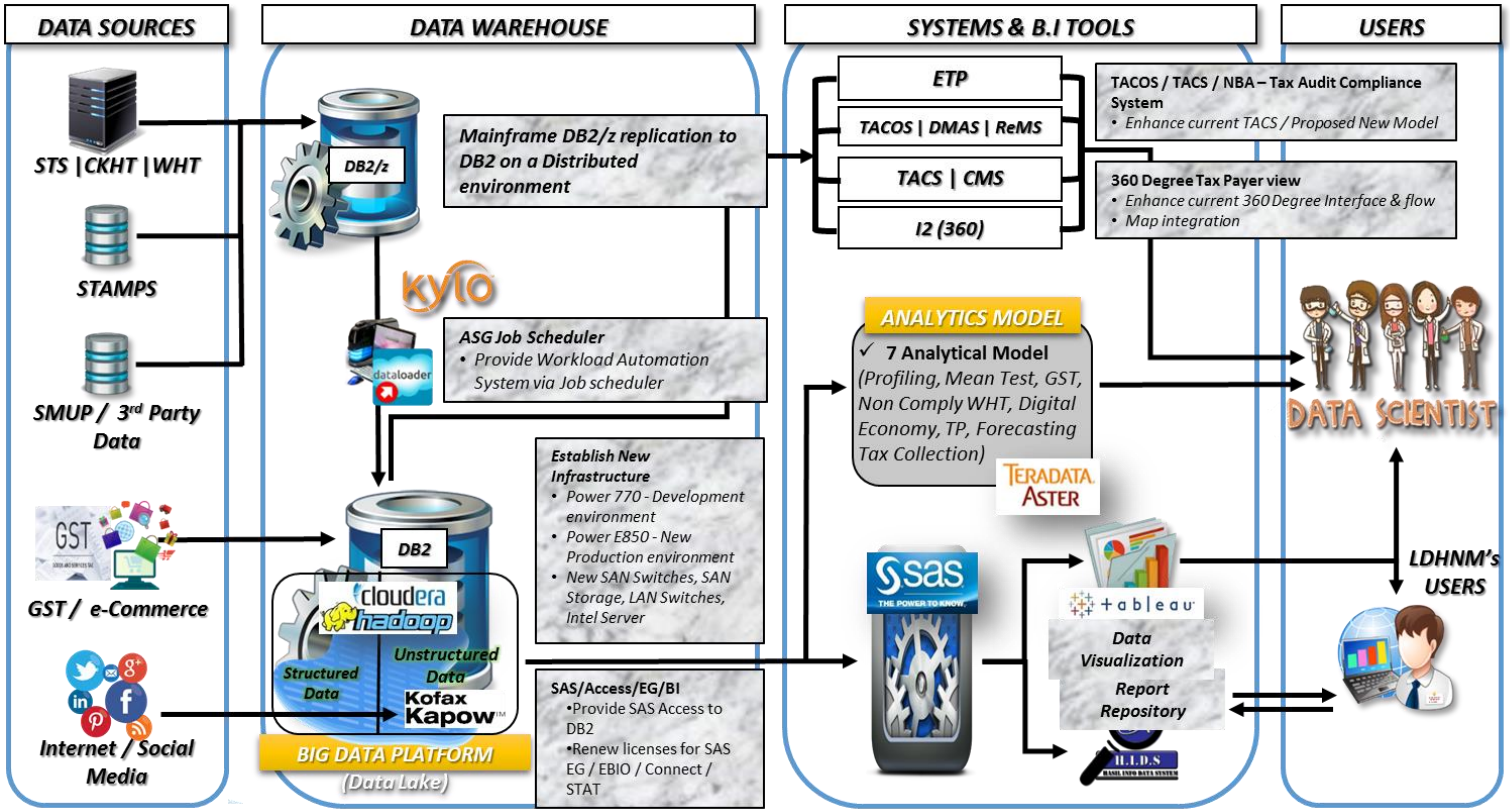
BIG DATA & INTERNET OF INFORMATION

ANALYTIC MODEL
Taxpayer profiling
Forecasting
Transfer Pricing
Means Test
WHT Compliance
Digital economy


BDA
Reporting
Descriptive Analytics
Predictive Analytics
Prescriptive Analytics
Routine decision support
Reactive operational reporting
Classic dashboard
Measure performance
BI tools,
Self-generated reports,
xcel and Add-ins
Dashboard and monitoring
Operational Reporting
Benchmarking Decision-Making
Multidimensional Analysis
Multidimensional Dashboards
Statistics, visualization, charts, cluster analysis
Predictive Analytics
Machine learning techniques
Advanced predictive models
Range of datasets
Actionable insights
Identify opportunities Trace causes of issues
Strategic objectives
Real-time analytics
Prescriptive Analytics, Tax Modeling & Decision Automation
Scenario Planning, Risk Analysis
Combined with Predictive Analytics
To forecast a view of the future and prepare.
Integration with Strategic Planning

LEVERAGING BIG DATA IN IRBM

BDA



EMPLOYING BIG DATA ANALYTICS TO IMPROVE TAX COMPLIANCE

BDA

SOUND SUPPLY CHAIN

3M CAPACITY

REVISIT PROCESSES

	Capability	Goals Supported
Operational	**Taxpayer Self-Assistance** Deliver reliable and secure self-service capability	Self-correction Customer satisfaction
Operational	**Taxpayer Engagement** Deliver high-value taxpayer experience across all channels	Efficient channel Customer satisfaction
Operational	**Issue Orientation** Apply issue-driven approaches across taxpayer segments	More timely resolution Decrease recurring issues
Operational	**Integrated Enforcement** Perform seamless treatment and case selection and execution across the enterprise	More timely resolution Decrease recurring issues
Foundational	**Workforce Planning & Development** Establish processes, systems and culture to support the workforce	Employee engagement Efficient operations
Foundational	**Data & Analytics** Increase data access and embed analytic approaches	Indirectly supports all
Foundational	**Operations Infrastructure** Optimize internal support processes	Employee engagement Efficient operations

Tax compliance

- Filing a return
- Declaring income correctly
- Paying the tax due in a timely manner

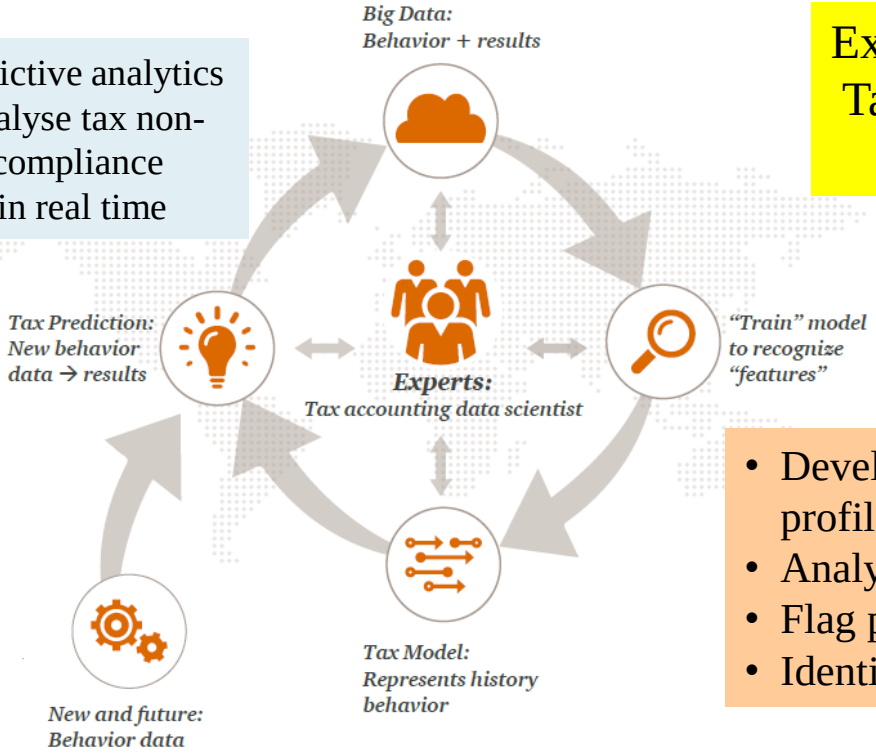
MANAGING TAX COMPLIANCE MODEL: PREDICTING TAXPAYER BEHAVIOUR

VARIOUS INFORMATION

BDA

Predictive analytics
Analyse tax non-compliance
in real time

Expectation:
Tax compliance



Analyse data interaction

Map tax journey

Identify compliance characteristic

- Develop sophisticated risk profiles
- Analyse trends
- Flag potential issues
- Identify higher-risk cases

Source: PwC Advanced tax Analytic & Innovation

DEBT ANALYTIC

BDA

DMAS

SPSS

TACOS

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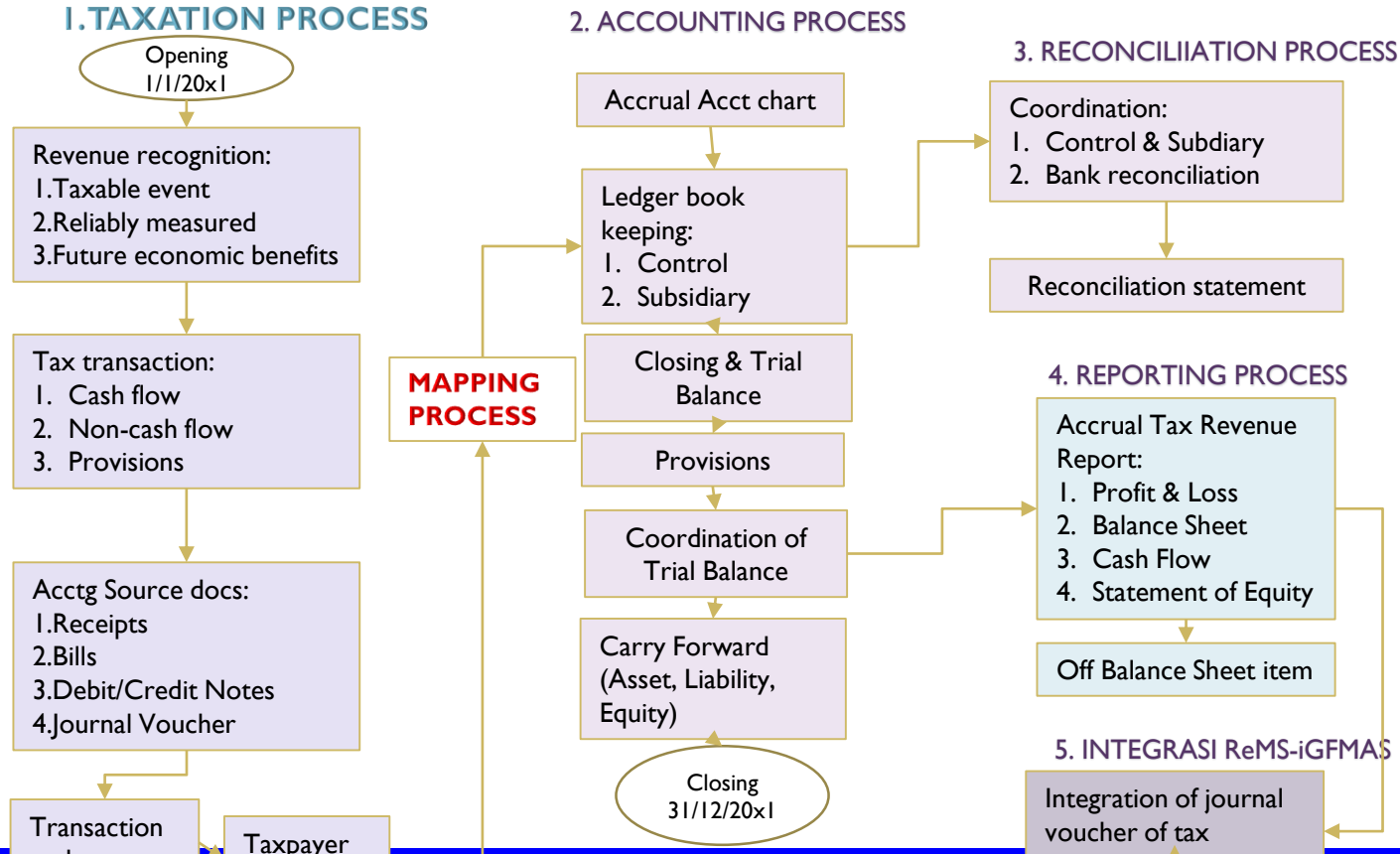
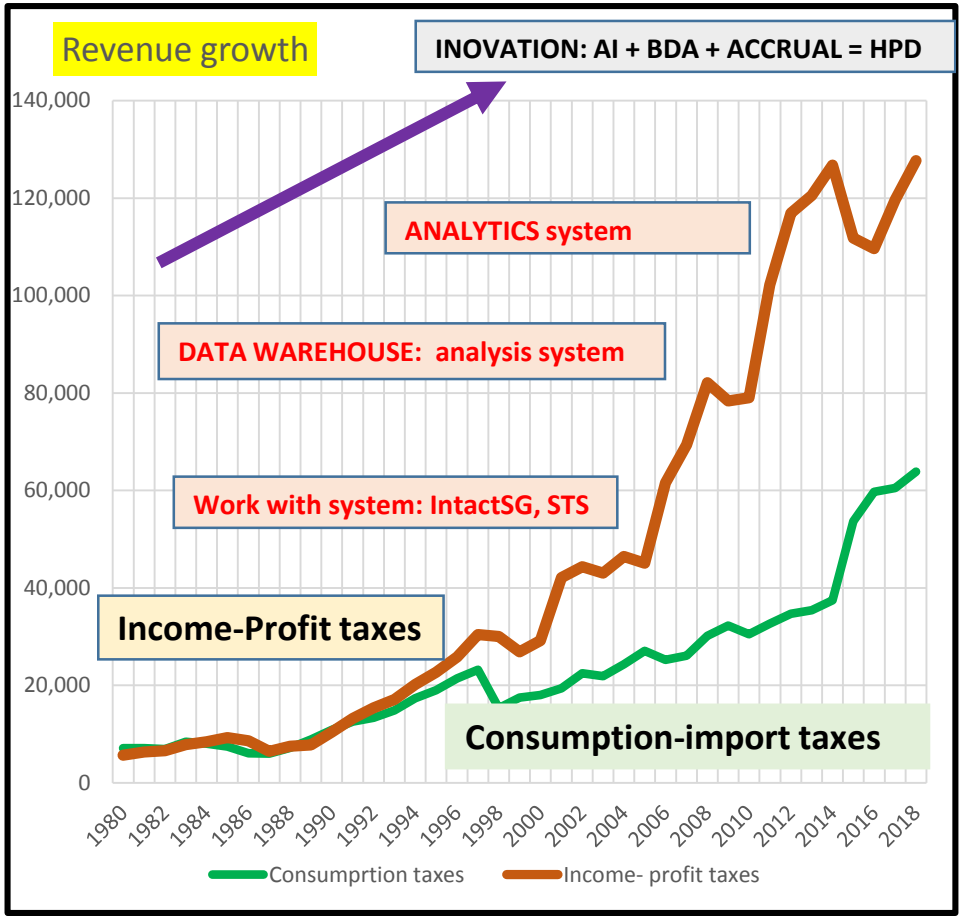
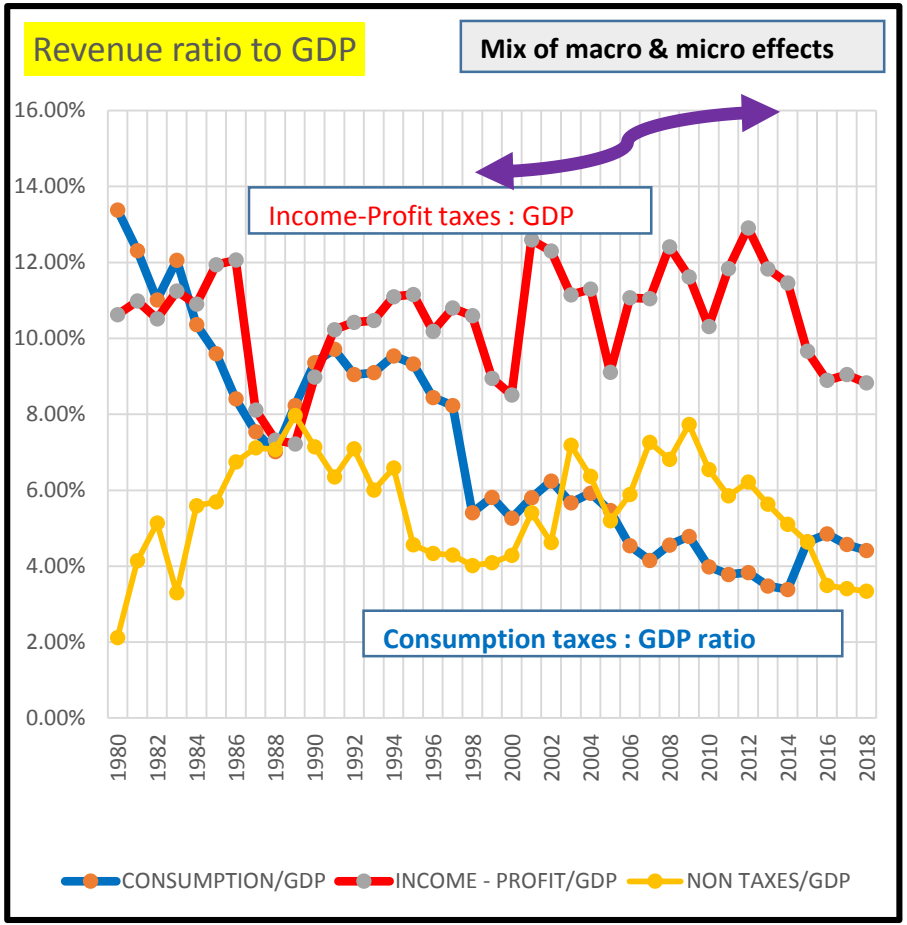
"REENGINEERING" SYSTEM + ACCRUAL RECORDING-REPORTING + BDA = **HASIL POWER DATA**

ReENGINEERING: Accrual accounting reporting system




Revenue growth
INOVATION: AI + BDA + ACCRUAL = HPD
ANALYTICS system
DATA WAREHOUSE: analysis system
Work with system: IntactSG, STS
Income-Profit taxes
Consumption-import taxes
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018
Consumprtion taxes
Income- profit taxes


Revenue ratio to GDP
Mix of macro & micro effects
Income-Profit taxes : GDP
Consumption taxes : GDP ratio
16.00%
14.00%
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018
CONSUMPTION/GDP
INCOME - PROFIT/GDP
NON TAXES/GDP

THANK YOU

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