Trends in Design and Implementation of Financial Management Information Systems (FMIS)

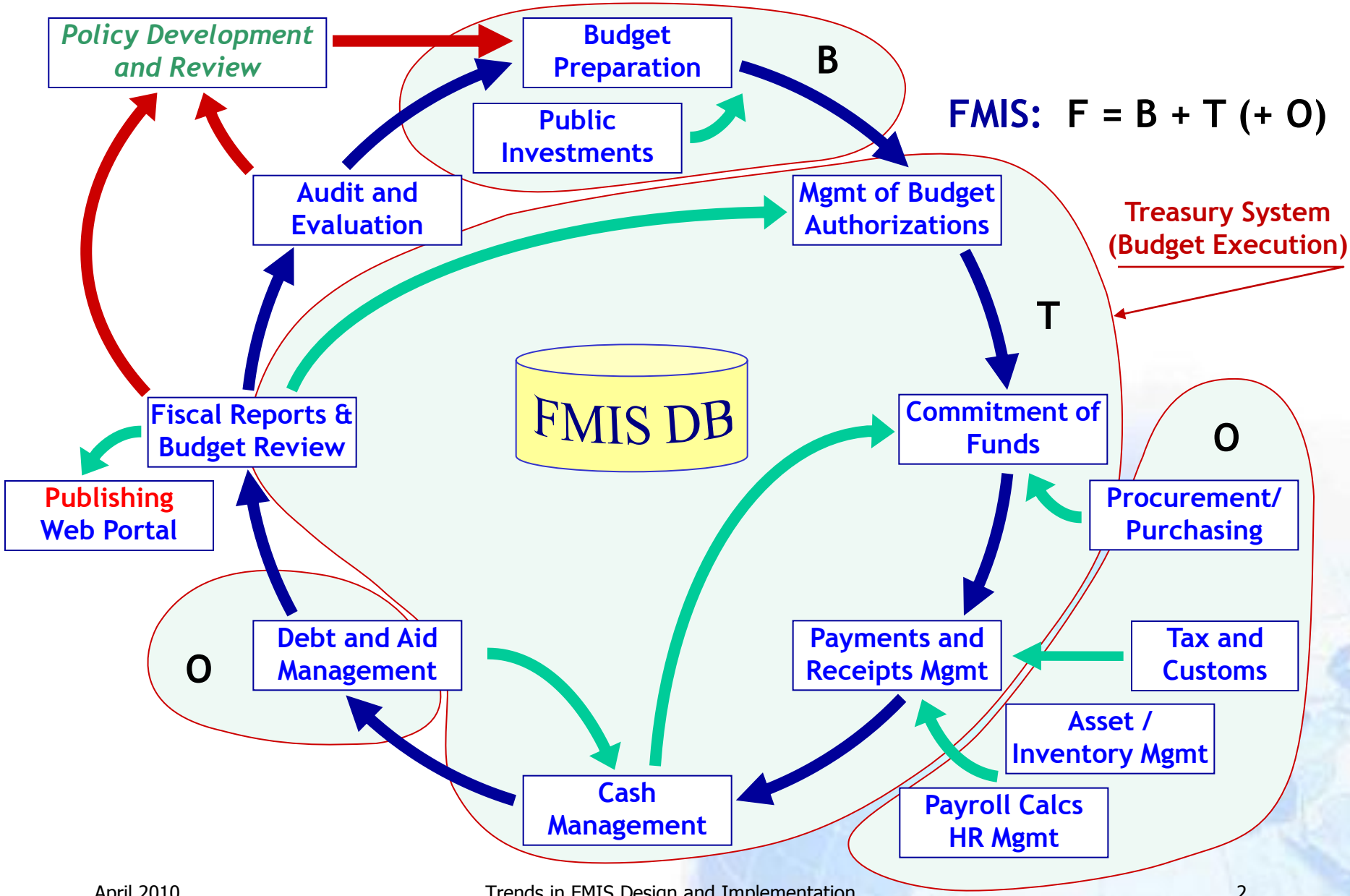
Cem Dener

Treasury Management Seminar
Lima, Peru
15-16 April 2010

Presentation

- What if FMIS?
- FMIS Implementation Approach
- Design & Implementation of FMIS Solutions
- Treasury Single Account
- FMIS Technical (ICT) Solutions
- FMIS Timeline
- Treasury/FMIS Projects (1984-2010)
- Monitoring and Knowledge Sharing
- Challenges and Conclusions

What is FMIS?


Policy Development and Review
Budget Preparation
B
Public Investments
FMIS: F = B + T (+ O)
Audit and Evaluation
Mgmt of Budget Authorizations
Treasury System (Budget Execution)
T
FMIS DB
Fiscal Reports & Budget Review
Commitment of Funds
O
Publishing Web Portal
Procurement/ Purchasing
O
Debt and Aid Management
Payments and Receipts Mgmt
Tax and Customs
Asset / Inventory Mgmt
Cash Management
Payroll Calcs HR Mgmt

Approach

1. Identify PFM reform needs (What? Why?)

   Assess Readiness + Define Strategy ➡ Conceptual Design

   Identify "Priorities" and "Sequencing" of PFM Reforms

2. Develop necessary solutions (How? Where? When?)

   Functionality + Tech Architecture + Specs ➡ System Design

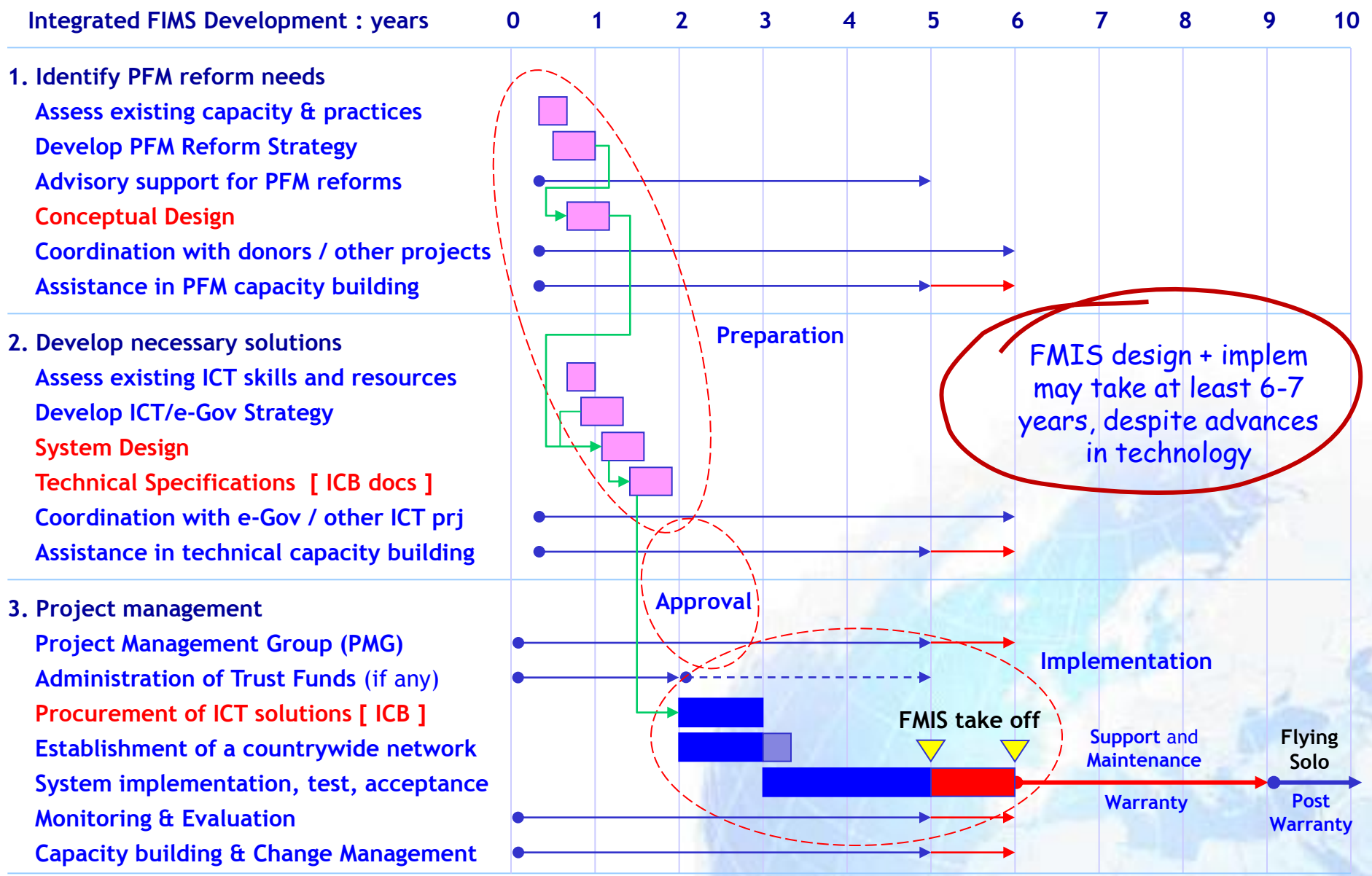
   Identify "FMIS Prerequisites"

3. Project management (Who?)

   Implement + Monitor + Evaluate + Coord ➡ FMIS Implementation

   Strengthen "Institutional Capacity" for Procurement, FM, ICT

Integrated FMIS Development Phases

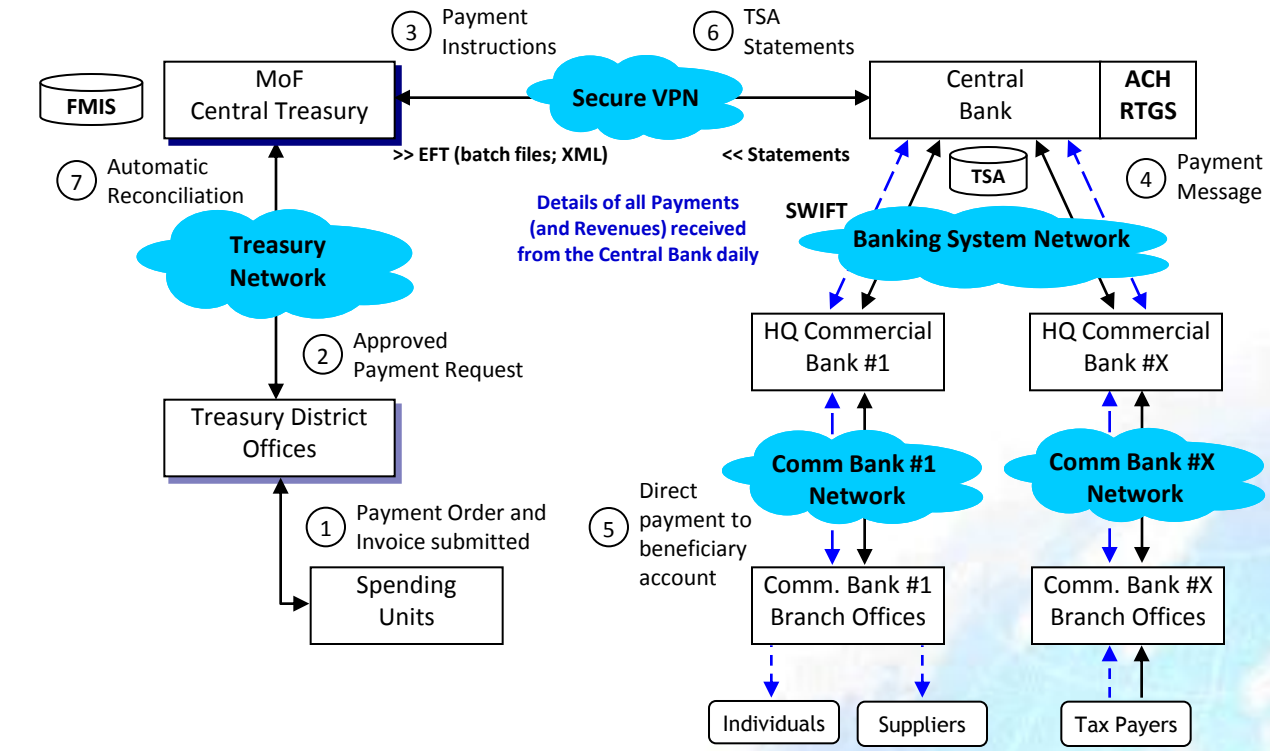


FMIS Functionality / Implementation Options

FMIS Functions	Common Implementation Options
• Macroeconomic Forecasting	LDSW / Existing Models
• Budget Preparation	LDSW / COTS
• Core **Treasury System**	COTS (customized)
▶ Expenditure Management	+ Interface w banking system (TSA)
▶ Revenue Management	+ Interface w revenue collection
▶ Accounting (General Ledger)	
▶ Cash / Fund Management	+ Interface w banking system (TSA)
▶ Commitments / Purchasing	+ Interface w procurement agency
▶ Financial Reports	
• Operational Support for SUs	LDSW for Spending Units (via Web Portal)
• Internal Debt Management	LDSW / Interface with Debt Mgmt System
• External Debt and Aid Mgmt.	Interface with Debt Mgmt System
• Asset / Inventory Management	LDSW / COTS
• Personnel Database / Payroll	LDSW / COTS
• Support for Auditing	Custom developed reports
• Web Publishing (Web Portal)	LDSW
• Decision Support Tools (MIS)	COTS / LDSW

[**COTS :** "customized" Commercial-off-the-Shelf Software **LDSW :** Locally Developed Software **TSA** : Treasury Single Account]

Centralized TSA Model



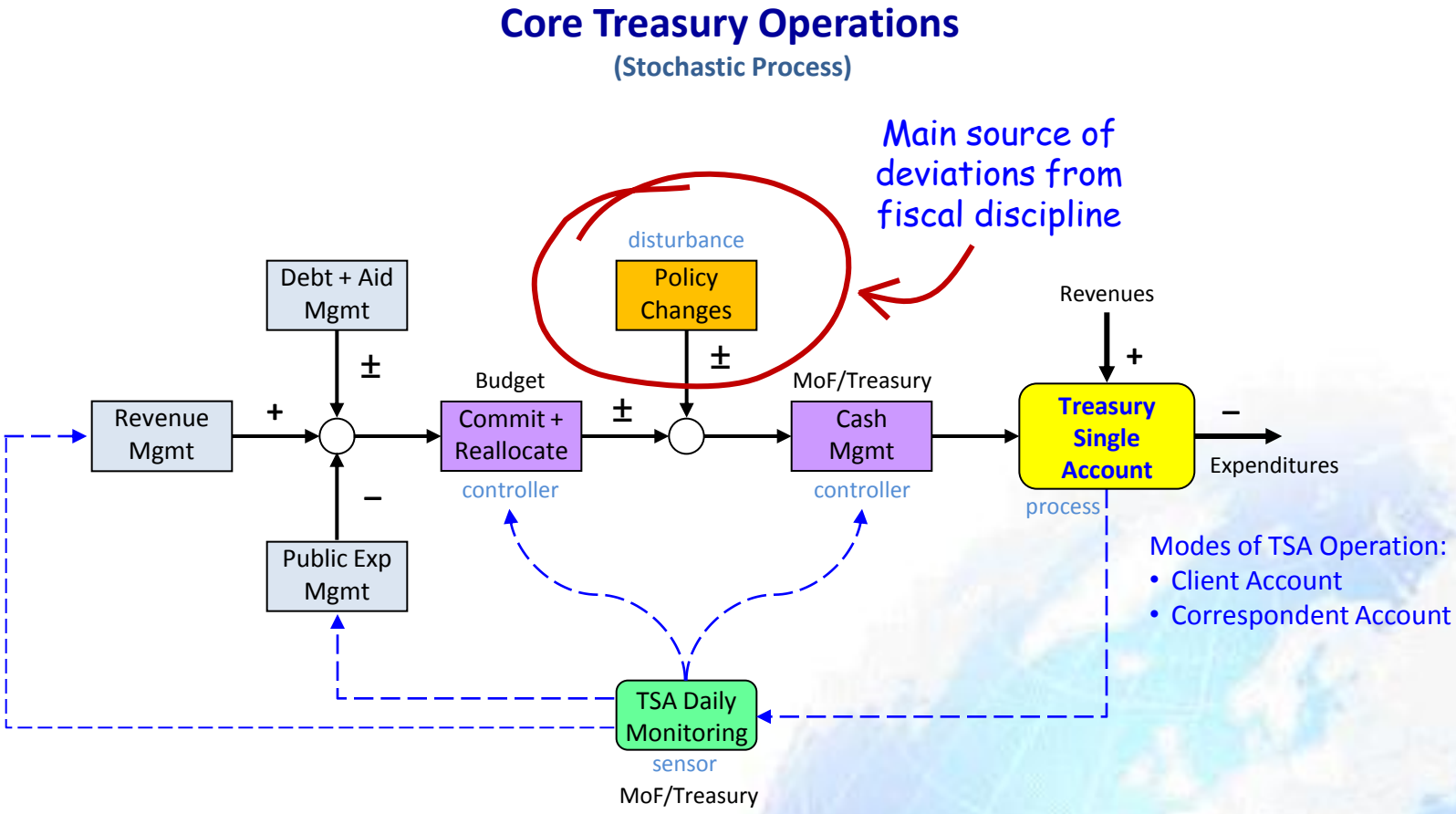
Document/info flow

Financial transactions

- **All TDO local bank accounts closed**
- NO local transit accounts

- **CT has only one integrated TSA account**
- NO Extra Budgetary Funds

TSA - Control System Analogy



FMIS Info & Comm Technology Solutions

- Modern integrated FMIS systems are designed and implemented as centralized web-based applications, supporting decentralized operations
- Implementation of the FMIS includes the following ICT components:

[1] Establishment of countrywide network connections (communications lines) usually as a Government contribution.

[2] Development of web-based Application Software (ASW) as a combination of customized COTS package + locally developed software (hybrid solution).

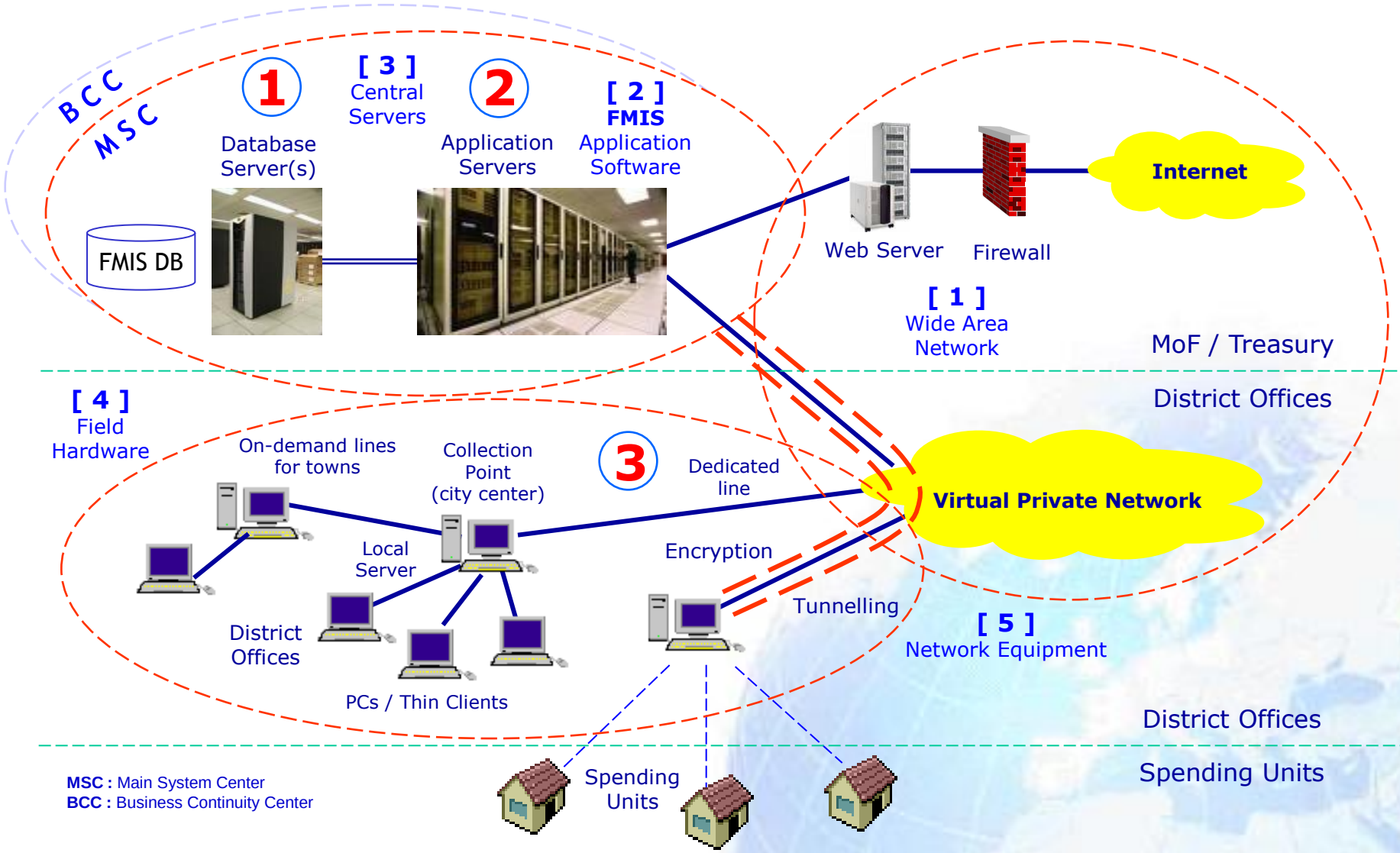
[3] Installation of central servers (database & application servers) and data storage units (fiber disk arrays) at the Main System Center & Business Continuity Center.

[4] Installation of standard field hardware (domain servers, user workstations and peripherals) in central and field offices.

[5] Installation of network equipment, system security and user management tools and engineering support solutions.

FMIS Technology Architecture

A typical 3-tier web-based implementation and [ICT] components



MSC : Main System Center
BCC : Business Continuity Center

Web-based FMIS Model

Database Server 1 Application Servers 2 Web Server 3 User Terminals

System Center Users

FMIS
Customized COTS

FMIS modules

Core Treasury System

LDSW

Locally Developed Software modules

Interfaces

Internal / External

COTS DB

Integrated FMIS DB

LDSW DB

Web Portal

VPN

Internet

Internal Access

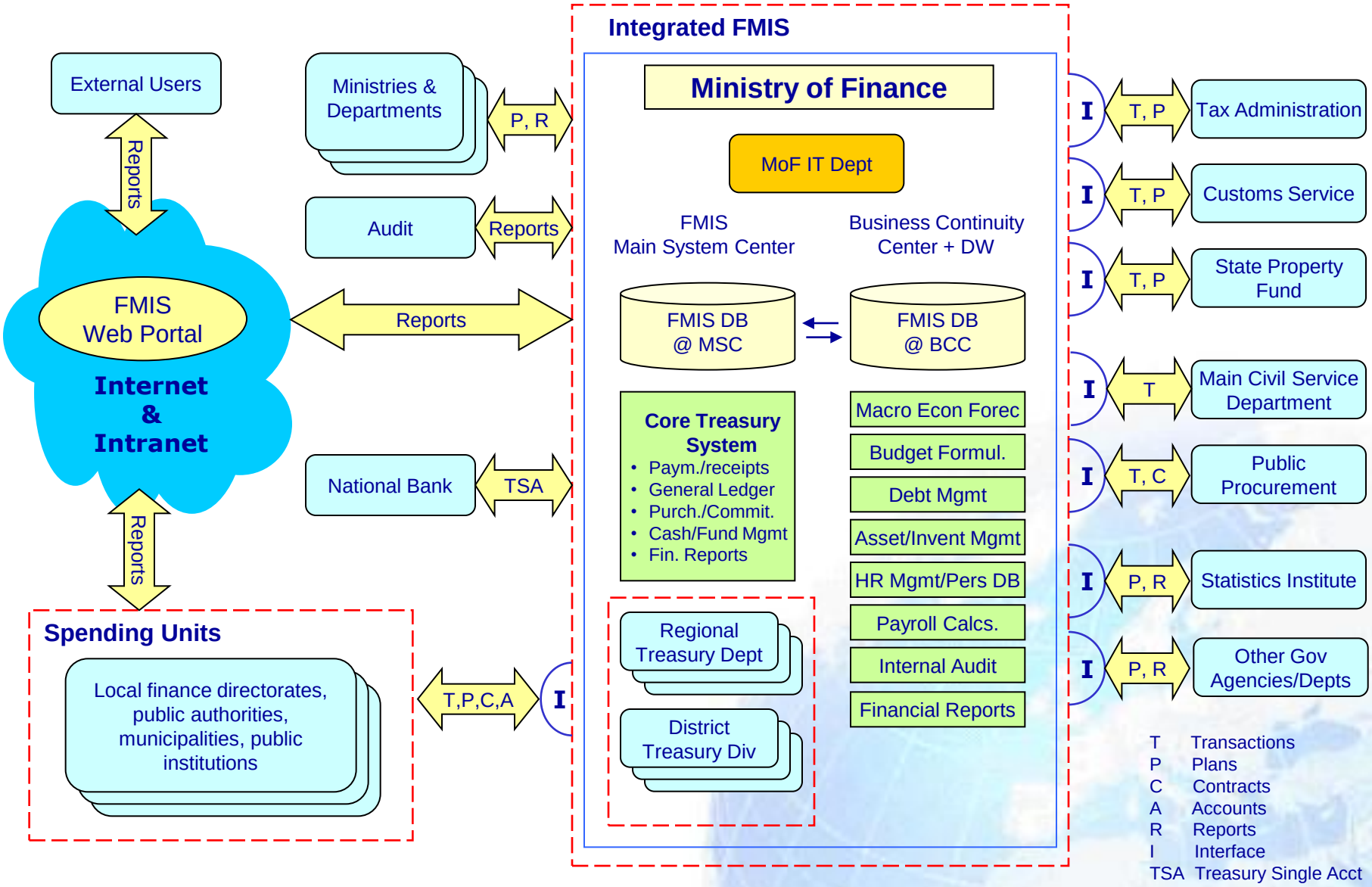
PFM Organizations (MoF Units, Treasury Offices,Line Ministries)

External Access

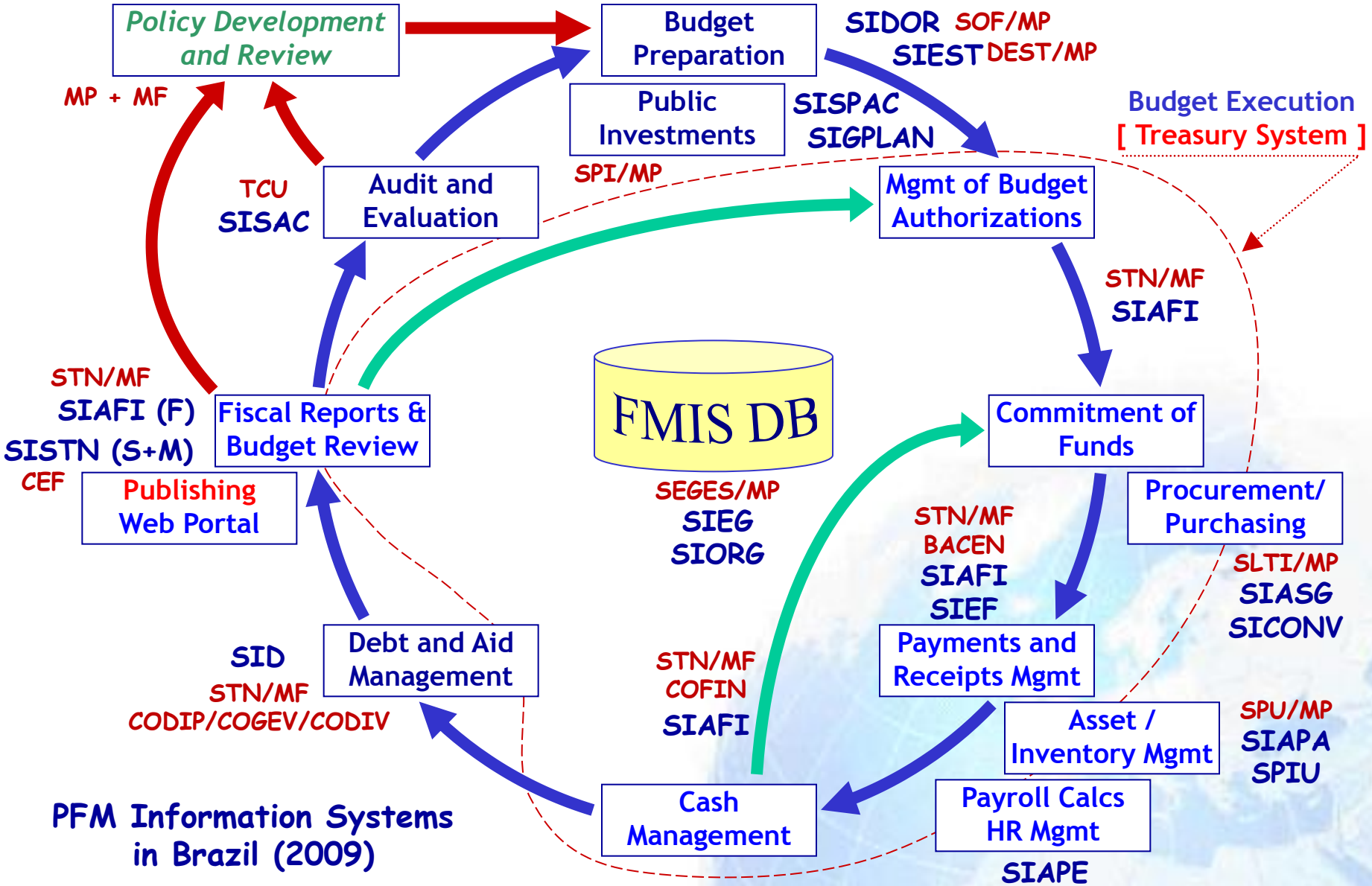
Spending Units, Local Finance Directorates, Local Public Authorities, Municipalities, etc.

LDSW : Locally Developed Software
COTS : Commercial-off-the-Shelf SW

FMIS Functionality (Ukraine)



FMIS in Brazil



PFM Information Systems in Brazil (2009)

FMIS Projects (1984-2010)

WB Funded Treasury/FMIS Projects		Closed	Active	Pipeline	Projects
Africa					**24**
1	Burkina Faso	1	1		2
2	Cape Verde	1			1
3	Congo, Democratic Republic of		1		1
4	Gambia, The	1		1	2
5	Ghana	1			1
6	Kenya	1	1		2
7	Liberia		1		1
8	Madagascar	1	1		2
9	Malawi	2			2
10	Nigeria	1		1	2
11	Sierra Leone	1	1		2
12	Tanzania		1		1
13	Uganda	2	1		3
14	Zambia	1	1		2
East Asia and Pacific					**11**
1	Cambodia		1	1	2
2	China	1			1
3	Indonesia	1	1		2
4	Lao People's Democratic Republic		1	1	2
5	Mongolia	1	1		2
6	Timor-Leste		1		1
7	Viet Nam		1		1
Europe and Central Asia					**14**
1	Albania	1	1		2
2	Azerbaijan	1			1
3	Georgia		1		1
4	Hungary	1			1
5	Kazakhstan	1			1
6	Kyrgyz Republic		1		1
7	Moldova		1		1
8	Russian Federation		1		1
9	Slovak Republic	1			1
10	Tajikistan		1		1
11	Türkiye	1			1
12	Ukraine	1	1		2

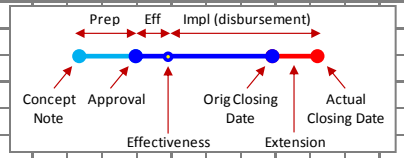
WB Funded Treasury/FMIS Projects in 51 Countries

WB Funded Treasury/FMIS Projects		Closed	Active	Pipeline	Projects
Latin America and Caribbean					**32**
1	Argentina	2			2
2	Bolivia	3			3
3	Brazil	2			2
4	Chile	2	1		3
5	Colombia	2	1		3
6	Ecuador	3			3
7	El Salvador	1		1	2
8	Guatemala	2	1		3
9	Honduras	2		1	3
10	Jamaica	2			2
11	Nicaragua	3		1	4
12	OECS countries		1		1
13	Venezuela, Republica Bolivariana de	1			1
Middle East and North Africa					**3**
1	Algeria	1			1
2	Yemen, Republic of		1	1	2
South Asia					**7**
1	Afghanistan	3	1		4
2	Maldives	1			1
3	Pakistan	1	1		2
51	countries	**54**	**29**	**8**	**91**

The review of WB funded FMIS projects was initiated by Dorotinsky (SM, ECSP4) in Sep 2009, to revise/update the FMIS Report drafted in 2002 with contributions from Watkins, Rozeira, Arizti, Bellver, Arrobbio, Ossio, Howard and Dener, as well as other interested specialists.

Timeline of FMIS Projects - I

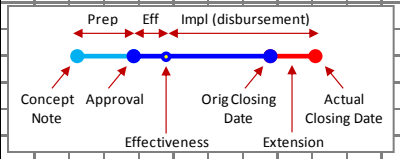
Cat	Project ID	Project Name	Region	Country	Prj Stat	Tot Yrs	T/F Stat
T	P000301	Public Institutional Develop	AFR	Burkina Faso	C	9.6	1
T	P078596	Administration Capacity Buil	AFR	Burkina Faso	A	8.1	3
F	P057998	Public Sector Reform And Ca	AFR	Cape Verde	C	3.8	0
T	P104041	Enhancing Governance Capa	AFR	Congo, Demo	A	5.7	3
F	P057995	Capacity Building for Econor	AFR	Gambia, The	C	9.8	2
F	P117275	Integrated Financial Manage	AFR	Gambia, The	P		4
F	P045588	Public Financial Managemer	AFR	Ghana	C	7.7	2
F	P066490	Public Sector Management T	AFR	Kenya	C	5.1	2
F	P090567	Institutional Reform and Cap	AFR	Kenya	A	6.0	3
F	P109775	Public Financial Managemer	AFR	Liberia	A	4.1	3
F	P074448	Governance and Institutiona	AFR	Madagascar	C	7.8	1
F	P103950	Governance and Institutiona	AFR	Madagascar	A	5.6	3
F	P001657	Institutional Development Pr	AFR	Malawi	C	13.4	2
F	P078408	Financial Mgmt, Transparen	AFR	Malawi	C	7.4	1
F	P065301	Economic Management Capa	AFR	Nigeria	C	9.2	0
F	P097026	Second State Governance an	AFR	Nigeria	P	6.7	4
F	P078613	Institutional Reform & Capac	AFR	Sierra Leone	C	5.6	2
F	P108069	Public Financial Managemer	AFR	Sierra Leone	A	5.6	3
F	P070544	Accountability, Transparenc	AFR	Tanzania	A	6.1	3
F	P002975	Economic and Financial Mar	AFR	Uganda	C	9.0	0
F	P044679	Second Economic and Financ	AFR	Uganda	C	8.7	2
F	P090867	Local Government Managem	AFR	Uganda	A	5.7	3
F	P050400	Public Service Capacity Build	AFR	Zambia	C	6.5	0
F	P082452	Public Sector Management P	AFR	Zambia	A	5.7	3
F	P087945	Public Financial Managemer	EAP	Cambodia	A	6.9	3
F	P113309	Public Financial Managemer	EAP	Cambodia	P		4
F	P036041	Fiscal Technical Assistance I	EAP	China	C	8.6	2
T	P004019	Accountancy Development Pr	EAP	Indonesia	C	7.3	1
F	P085133	Government Financial Mana	EAP	Indonesia	A	10.1	3
T	P077620	Financial Management Capa	EAP	Lao People's	A	9.1	3
T	P107757	Treasury Modernization	EAP	Lao People's	P		4
T	P051855	Fiscal Accounting Technical	EAP	Mongolia	C	8.1	1
T	P098426	Governance Assistance Proje	EAP	Mongolia	A	6.3	1
F	P092484	Planning and Financial Man	EAP	Timor-Leste	A	6.4	1
T	P075399	Public Financial Managemer	EAP	Viet Nam	A	9.1	1
T	P069939	Public Administration Reforr	ECA	Albania	C	7.5	1
F	P105143	MDTF for Capacity Building &	ECA	Albania	A	3.6	3
T	P066100	(former IBTA-II) Highly Patho	ECA	Azerbaijan	C	9.9	1
F	P063081	Public Sector Financial Mana	ECA	Georgia	A	6.4	3
F	P043446	Public Finance Management	ECA	Hungary	C	6.7	1
T	P037960	Treasury Modernization Proj	ECA	Kazakhstan	C	8.5	1
F	P071063	Governance Technical Assist	ECA	Kyrgyz Repub	A	8.7	3
F	P082916	Public Financial Managemer	ECA	Moldova	A	7.8	3
T	P064508	Treasury Development Proje	ECA	Russian Fede	A	11.6	1
F	P069864	Public Finance Management	ECA	Slovak Repub	C	5.6	1
F	P099840	Public Financial Managemer	ECA	Tajikistan	A	8.0	3



Project Status: C=Closed; A=Active; P=Pipeline Total Duration in years **Treasury/FMIS Status**: 1= Operational; 2= Oper. (Pilot); 3= In progress; 4=Pipeline 0= Not implemented

Timeline of FMIS Projects - II

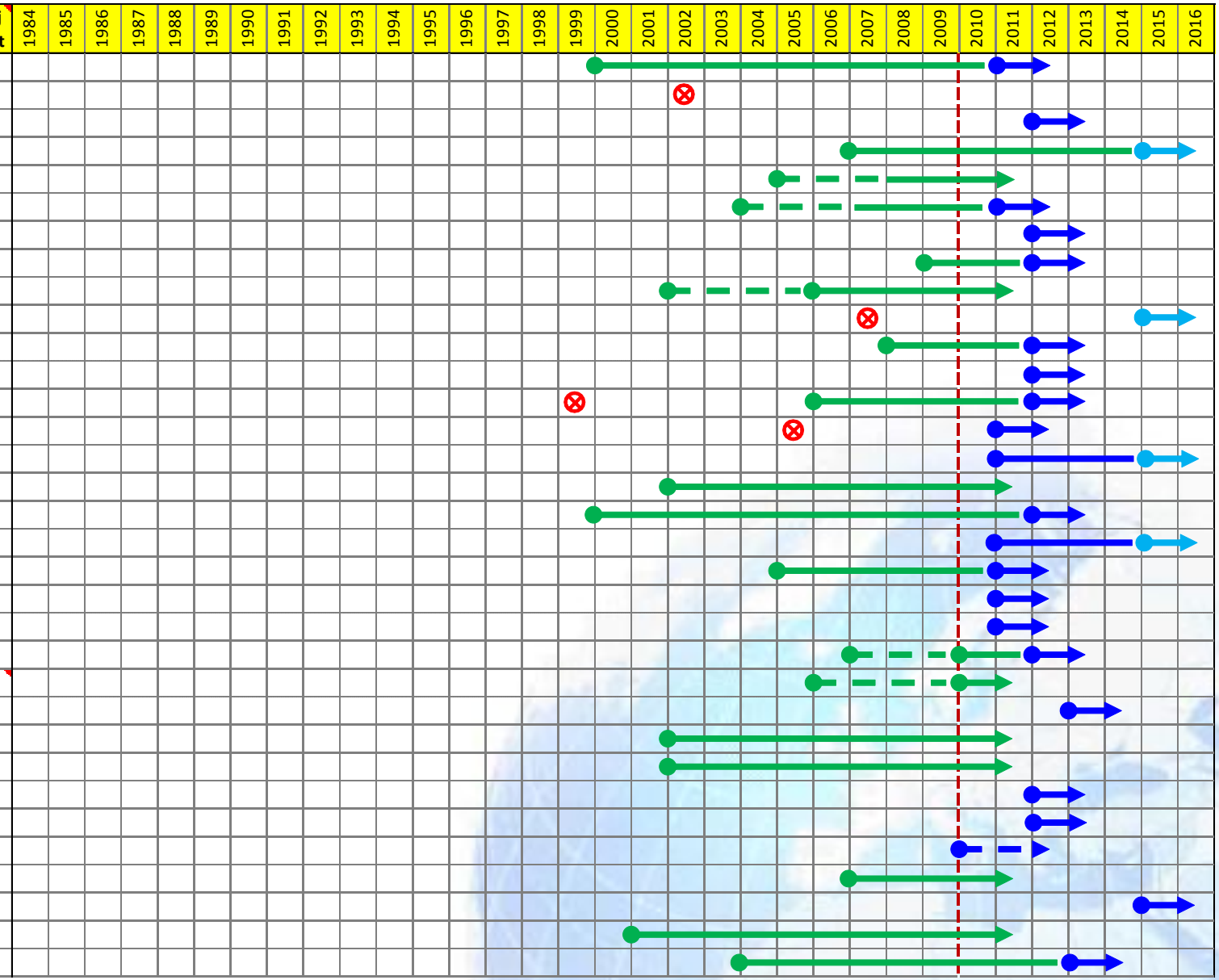
Cat	Project ID	Project Name	Region	Country	Prj Stat	Tot Yrs	T/F Stat
T	P035759	Public Finance Management	ECA	Türkiye	C	8.5	1
T	P049174	Treasury Systems Project	ECA	Ukraine	C	7.9	1
F	P090389	Public Finance Modernizatio	ECA	Ukraine	A	7.5	3
F	P006029	Public Sector Reform Technic	LCR	Argentina	C	6.7	1
F	P037049	Public Investment Strengther	LCR	Argentina	C	12.4	1
T	P006160	Public Financial Managemer	LCR	Bolivia	C	8.4	2
T	P006189	Public Financial Managemer	LCR	Bolivia	C	7.6	2
T	P040110	Financial Decentralization &	LCR	Bolivia	C	6.9	2
T	P006394	Public Sector Management L	LCR	Brazil	C	9.6	1
F	P073294	Fiscal and Financial Manage	LCR	Brazil	C	7.8	0
T	P006669	Public Sector Management P	LCR	Chile	C	8.1	1
F	P069259	Public Expenditure Managem	LCR	Chile	C	6.5	1
F	P103441	Second Public Expenditure M	LCR	Chile	A	6.5	3
F	P006889	Public Financial Managemer	LCR	Colombia	C	8.3	1
F	P040109	Public Financial Managemer	LCR	Colombia	C	10.0	2
F	P106628	Improving Public Manageme	LCR	Colombia	A	3.3	3
F	P007071	Public Sector Management P	LCR	Ecuador	C	8.5	2
F	P007136	Modernization of the State Te	LCR	Ecuador	C	7.2	1
F	P074218	Public Sector Financial Mana	LCR	Ecuador	C	7.4	1
F	P007164	Public Sector Modernization	LCR	El Salvador	C	12.8	2
F	P095314	Second Public Sector Moderr	LCR	El Salvador	P	5.3	4
F	P007213	Integrated Financial Manage	LCR	Guatemala	C	4.7	2
F	P048657	Integrated Financial Manage	LCR	Guatemala	C	5.2	1
F	P066175	Integrated Financial Manage	LCR	Guatemala	A	9.8	3
F	P034607	Public Sector Modernization	LCR	Honduras	C	7.8	2
F	P060785	Economic and Financial Mar	LCR	Honduras	C	6.6	1
F	P110050	State Modernization	LCR	Honduras	P		4
T	P007457	Financial and Program Mana	LCR	Jamaica	C	11.4	2
T	P007490	Public Sector Modernization	LCR	Jamaica	C	9.9	1
F	P035080	Institutional Development Cr	LCR	Nicaragua	C	7.8	2
F	P049296	Economic Management Tech	LCR	Nicaragua	C	4.7	1
F	P078891	Public Sector Technical Assis	LCR	Nicaragua	C	6.7	1
F	P111795	Public Financial Managemer	LCR	Nicaragua	P		4
F	P100635	OECS E-Government for Regic	LCR	OECS Countri	A	5.2	3
F	P057601	Public Expenditure Managem	LCR	Venezuela, Re	C	7.6	1
F	P064921	Budget System Modernizatio	MNA	Algeria	C	9.3	0
F	P050706	Civil Service Modernization I	MNA	Yemen, Reput	A	12.4	1
F	P117363	Public Finance Modernizatio	MNA	Yemen, Reput	P		4
T	P077417	Emergency Public Administra	SAR	Afghanistan	C	3.6	2
T	P082610	Emergency Public Administra	SAR	Afghanistan	C	5.4	2
T	P084736	Public Admin Cpacity Buildir	SAR	Afghanistan	C	4.9	1
T	P099980	Public Financial Managemer	SAR	Afghanistan	A	4.1	1
T	P094193	Post Tsunami Emegency Relie	SAR	Maldives	C	5.0	1
T	P036015	Improvement to Financial Re	SAR	Pakistan	C	12.2	1
T	P076872	Second Improvement to Final	SAR	Pakistan	A	8.5	1



Project Status: C=Closed; A=Active; P=Pipeline Total Duration in years **Treasury/FMIS Status**: 1= Operational; 2= Oper. (Pilot); 3= In progress; 4=Pipeline 0= Not implemented

FMIS in Operations - I

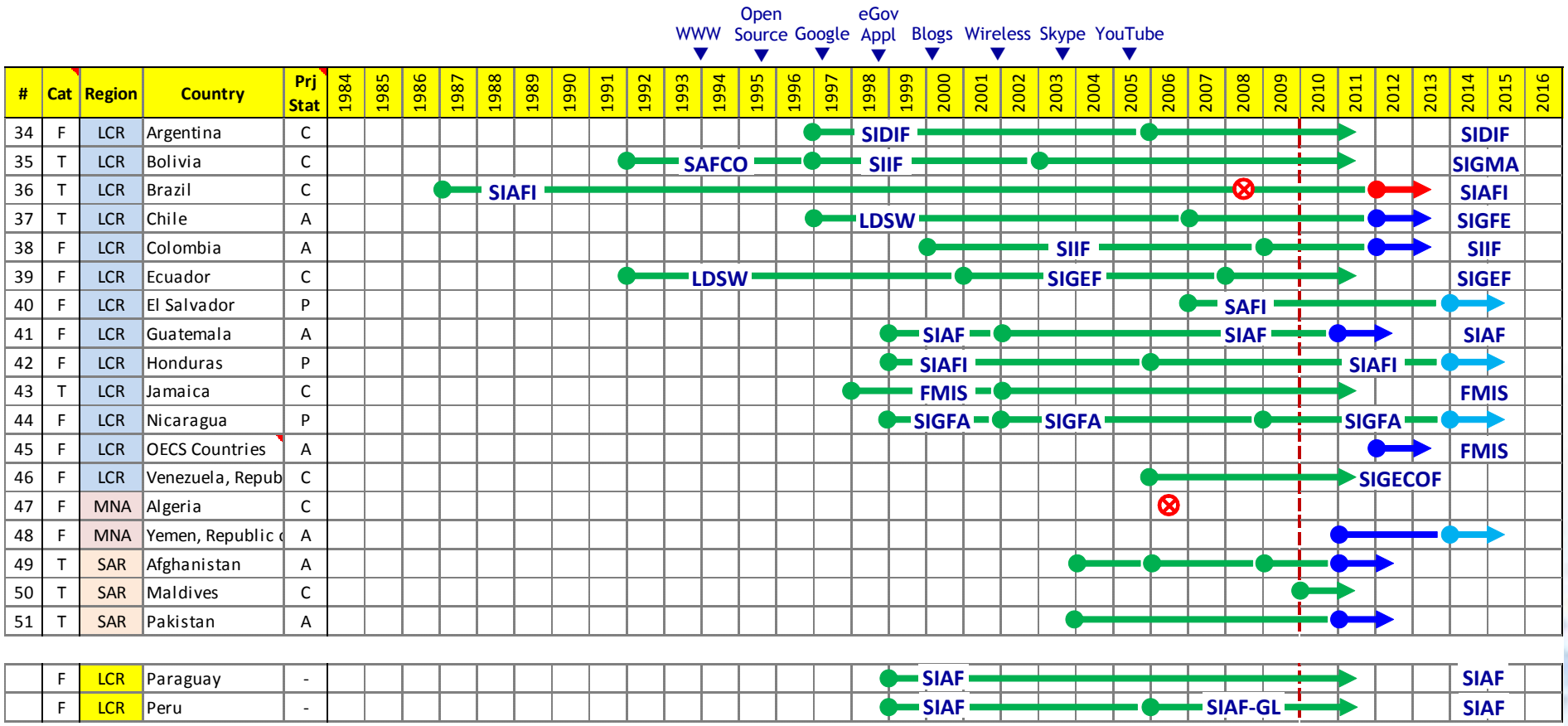
#	Cat	Region	Country	Prj Stat
1	T	AFR	Burkina Faso	A
2	F	AFR	Cape Verde	C
3	T	AFR	Congo, Democrati	A
4	F	AFR	Gambia, The	P
5	F	AFR	Ghana	C
6	F	AFR	Kenya	A
7	F	AFR	Liberia	A
8	F	AFR	Madagascar	A
9	F	AFR	Malawi	C
10	F	AFR	Nigeria	P
11	F	AFR	Sierra Leone	A
12	F	AFR	Tanzania	A
13	F	AFR	Uganda	A
14	F	AFR	Zambia	A
15	F	EAP	Cambodia	A
16	F	EAP	China	C
17	T	EAP	Indonesia	A
18	T	EAP	Lao People's Dem	A
19	T	EAP	Mongolia	A
20	F	EAP	Timor-Leste	A
21	T	EAP	Viet Nam	A
22	T	ECA	Albania	A
23	T	ECA	Azerbaijan	C
24	F	ECA	Georgia	A
25	F	ECA	Hungary	C
26	T	ECA	Kazakhstan	C
27	F	ECA	Kyrgyz Republic	A
28	F	ECA	Moldova	A
29	T	ECA	Russian Federatic	A
30	F	ECA	Slovak Republic	C
31	F	ECA	Tajikistan	A
32	T	ECA	Türkiye	C
33	F	ECA	Ukraine	A



FMIS in Operations - II

Latin America & Caribbean: 25 WB funded T/F projects completed in 12 countries

Sistema Integrado de Administracion Financiera (SIAF)



T	18	14	AFR	Closed	17
F	33	7	EAP	Active	29
	51	12	ECA	Pipeline	5
		13	LCR		51
		2	MNA		
		3	SAR		
		51			

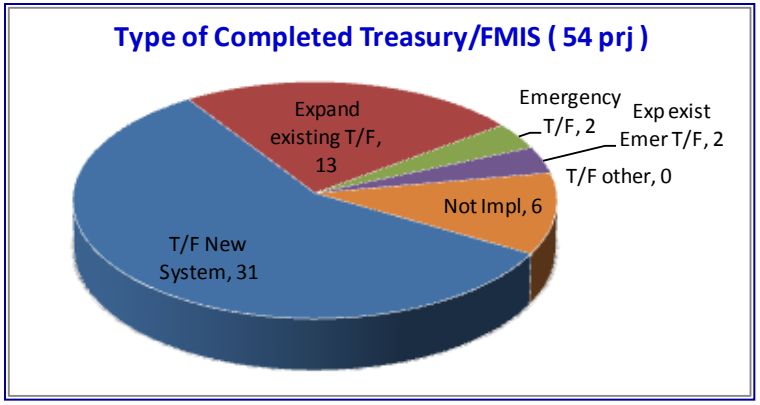
- T/F Operational (Completed)
- T/F Expected Go-Live (Active)
- T/F Planned (Pipeline)
- T/F Not Implemented

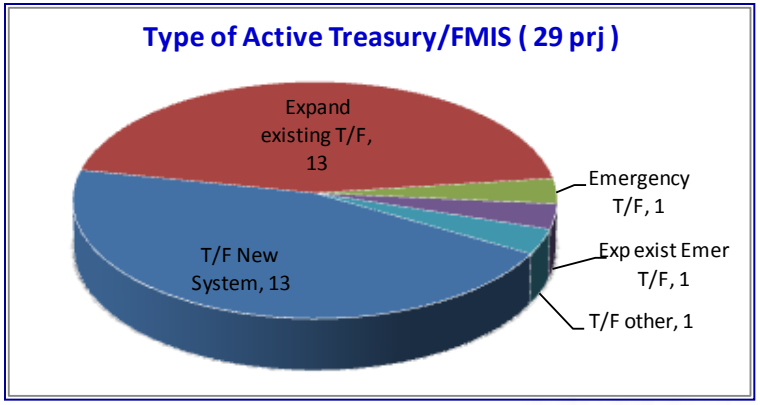
Notes:

- Above timelines denote the operational period of T/F systems developed through Bank funded projects.
- In some countries, several consecutive projects were implemented to expand or upgrade existing T/F.
- Dashed lines denote the transition to full scale operations.

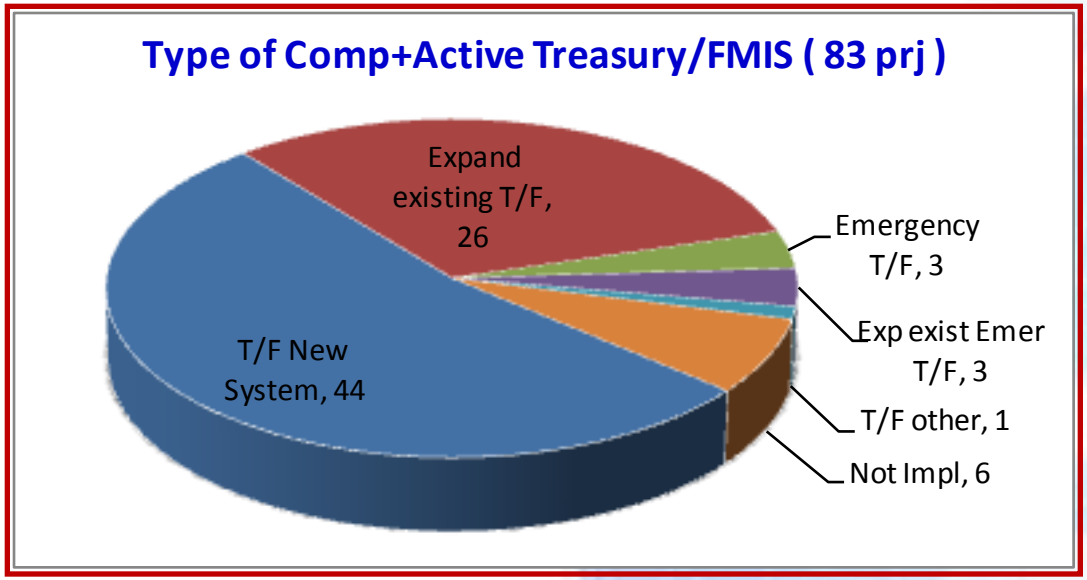
FMIS Projects (1984-2010)

Type of FMIS Projects





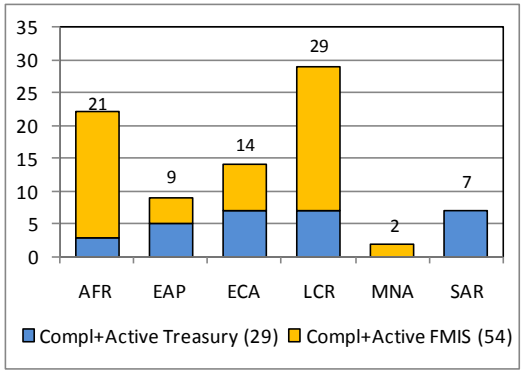
LCR : 13 new (5 T + 8 F)



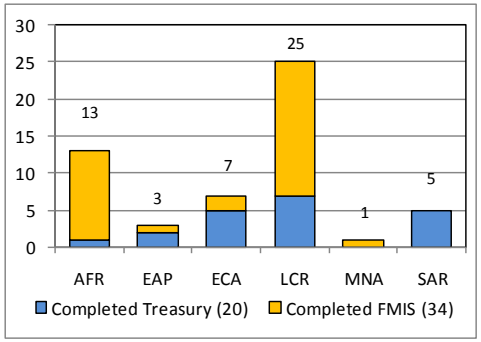
FMIS Projects (1984-2010)

Status of FMIS Projects

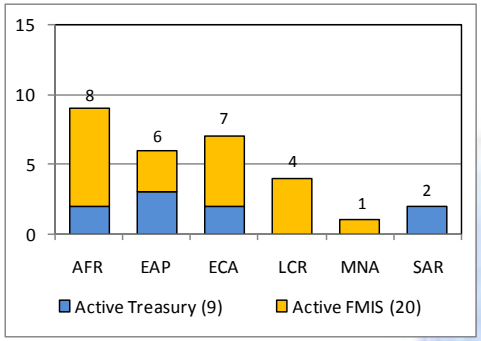
Completed + Active (83)



Completed (54)



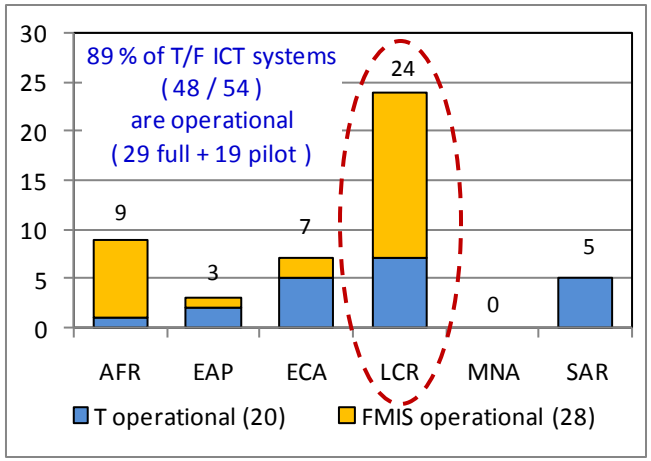
Active (29)



Operational

89%

+



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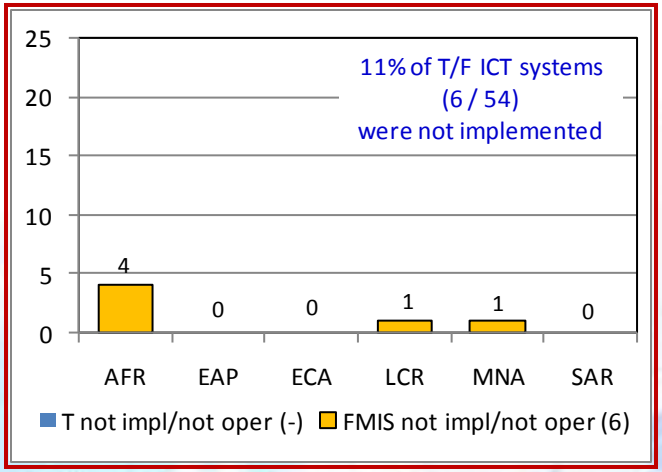
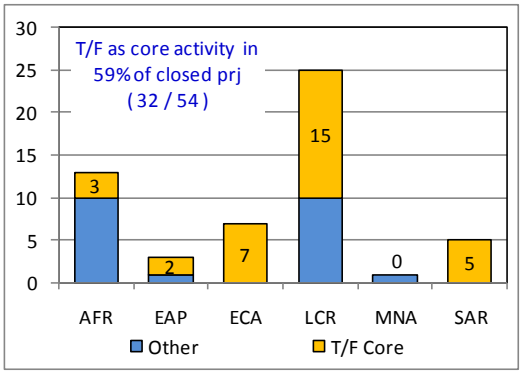
11%

Not Impl.

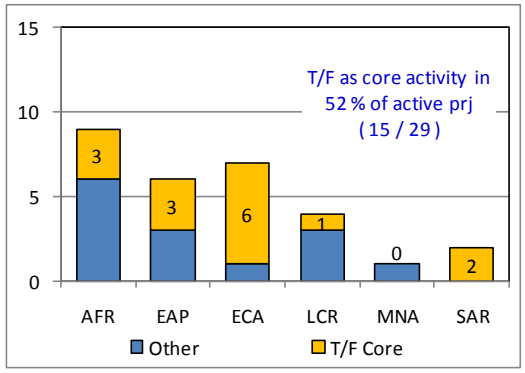


FMIS Projects (1984-2010)

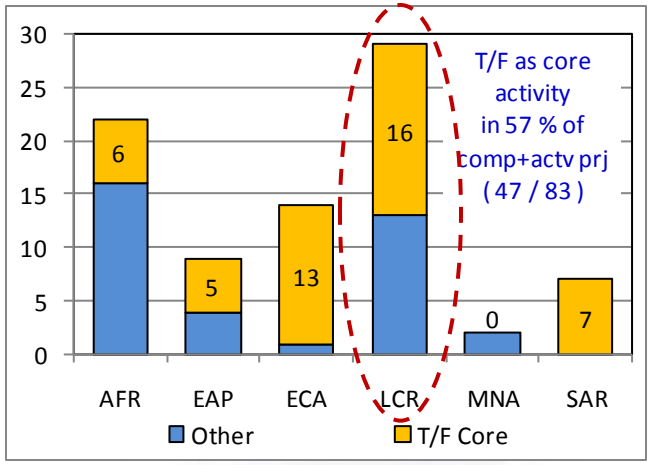
Weight of Treasury/FMIS Activities in Projects



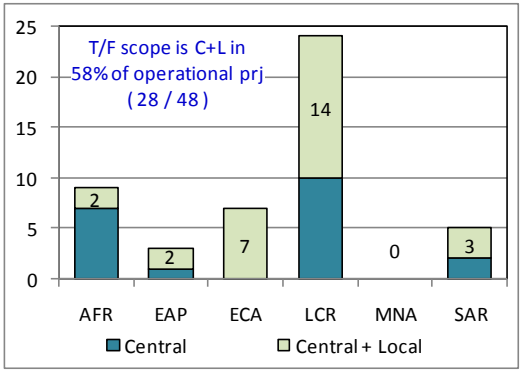
Completed (54)



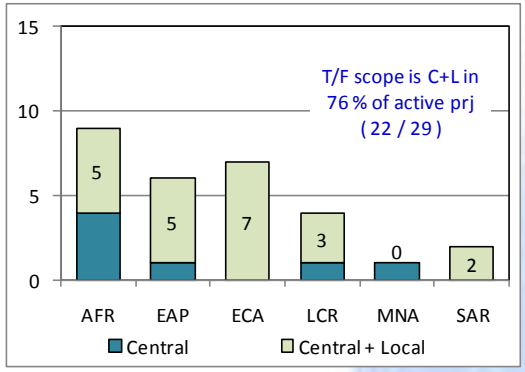
Active (29)



Scope of Treasury/FMIS Projects



Operational (48)



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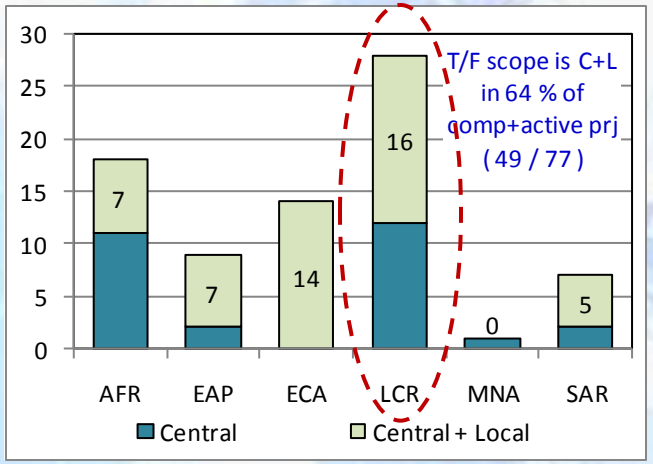
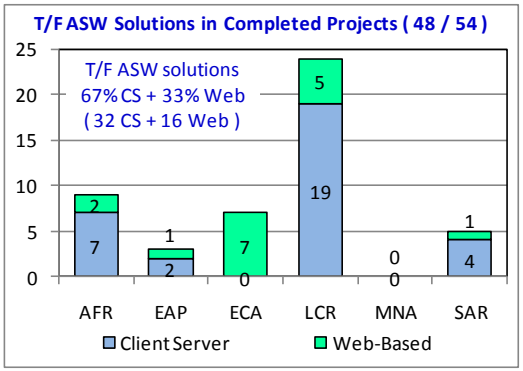
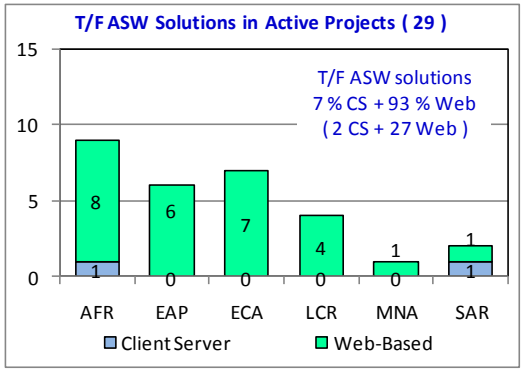
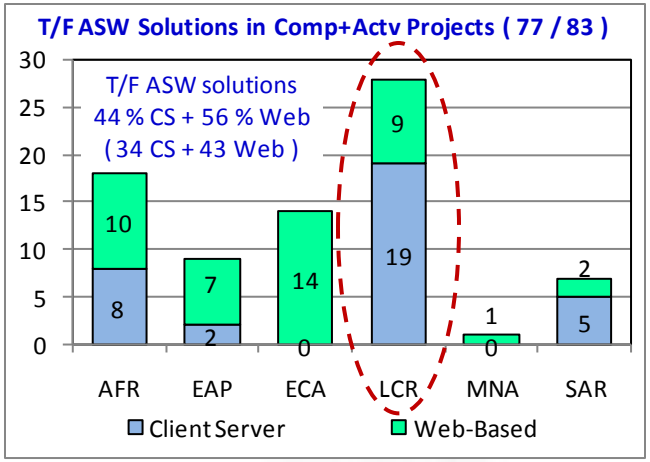


FMIS Projects (1984-2010)

Treasury/FMIS Application Software Solutions







T/F Application Software Solutions (Completed)

Region	# C	COTS	Other	LDSW	?
AFR	9	9	3		
EAP	3	2		1	
ECA	7	4		3	
LAC	24	1	1	23	
MNA	0				
SAR	5	5			
Totals	48	21	4	27	0

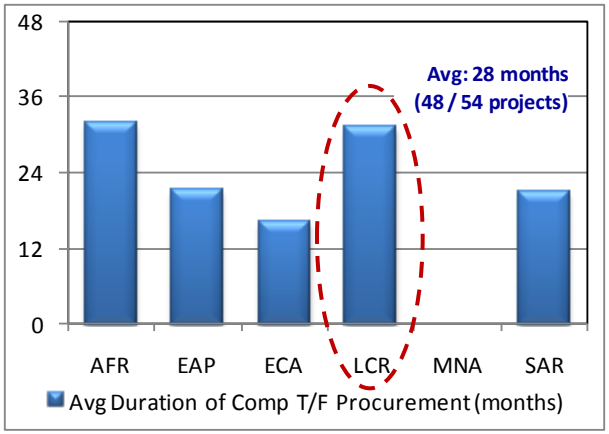
T/F Application Software Solutions (Active)

Region	# A	COTS	Other	LDSW	?
AFR	9	8	1		1
EAP	6	5			1
ECA	7	4			3
LAC	4	2	1	2	
MNA	1			1	
SAR	2	2			
Totals	29	21	2	3	5

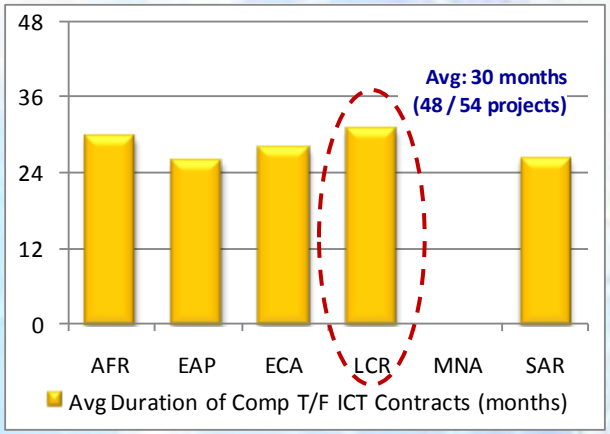
T/F Application Software Solutions (Comp+Active)

Region	# C+A	COTS	Other	LDSW	?
AFR	18	17	4	-	1
EAP	9	7	-	1	1
ECA	14	8	-	3	3
LAC	28	3	2	25	-
MNA	1		-	1	-
SAR	7	7	-	-	-
Totals	77	42	6	30	5

Duration of T/F Procurement



Duration of T/F Contracts



Cost of FMIS Projects

Completed until Dec 2009

Completed Treasury/FMIS projects (54)

	Estimated ($ m)	Actual ($ m)	%	
Project cost	1,353	1,366	1%	loan + other
WB funding	1,064	1,015	74%	funded by the WB
Total ICT spending		614	45%	spent on ICT
Total T/F ICT systems		312	23%	for T/F in 48 projects

Mostly Approved after 2002

Active Treasury/FMIS projects (29)

	Estimated ($ m)	Actual ($ m)	%	
Project cost	1,822	1,984	9%	loan + other
WB funding	998	391	55%	WB disbursement to date
Total ICT spending	1,110		56%	est spending on ICT
Total T/F ICT system	578		29%	est spending on T/F

Completed+Active Treasury/FMIS projects (83)

	Estimated ($ m)	Actual ($ m)	%	
Project cost	3,175	3,350	6%	loan + other
WB funding	2,062	1,406	42%	est WB funding
Total ICT spending		1,725	51%	act+est spending on ICT
Total T/F ICT systems		890	27%	act+est spending on T/F

FMIS Projects (1984-2010)

Regional Distribution of FMIS Project Costs

Completed until Dec 2009

Total vs ICT Cost of Completed Treasury/FMIS projects (54)

Region	# Prj	Prj Total ($ m)	ICT Cost ($ m)	T/F ICT ($ m)	% Tot	Cost ($m)/Prj	# C	T/F Core
AFR	13	409.2	156.8	52.6	13%	5.8	9	3
EAP	3	105.8	66.7	16.3	15%	5.4	3	2
ECA	7	160.8	125.4	70.0	44%	10.0	7	7
LCR	25	589.0	215.9	131.3	22%	5.5	24	15
MNA	1	7.0	1.8	0.0	0%	0.0	0	0
SAR	5	93.9	47.9	41.6	44%	8.3	5	5
Totals	54	**1,365.6**	**614.4**	**311.8**		**6.5**	48	32

Mostly Approved after 2002

Estimated/Actual Total vs ICT Cost of Active Treasury/FMIS projects (29)

Region	# Prj	Prj Total ($ m)	ICT Cost ($ m)	T/F ICT ($ m)	% Tot	Cost ($m)/Prj	# A	T/F Core
AFR	9	658.1	130.6	77.1	12%	8.6	9	3
EAP	6	244.5	145.3	109.9	45%	18.3	6	3
ECA	6	136.3	99.4	96.8	71%	16.1	6	5
ECA: RF TDP	1	663.0	576.0	221.6	33%		1	1
LCR	4	112.0	77.9	32.1	29%	8.0	4	1
MNA	1	44.0	19.0	12.6	29%	12.6	1	0
SAR	2	126.4	62.2	28.4	22%	14.2	2	2
Totals	29	**1,984.3**	**1,110.4**	**578.4**		**12.7**	29	15

Total vs ICT Cost of Completed+Active Treasury/FMIS projects (83)

Region	# Prj	Prj Total ($ m)	ICT Cost ($ m)	T/F ICT ($ m)	% Tot	Cost ($m)/Prj	# C+A	T/F Core
AFR	22	1,067.3	287.4	129.7	12%	7.2	18	6
EAP	9	350.3	212.0	126.2	36%	14.0	9	5
ECA	13	297.0	224.7	166.8	56%	13.9	13	12
ECA: RF TDP	1	663.0	576.0	221.6	33%		1	1
LCR	29	701.0	293.8	163.4	23%	5.8	28	16
MNA	2	51.0	20.8	12.6	25%	12.6	1	0
SAR	7	220.3	110.1	70.0	32%	10.0	7	7
Totals	83	**3,349.9**	**1,724.8**	**890.2**		**8.8**	77	47

FMIS Projects (1984-2010) - Initial Observations

- Appears to be four distinct regional T/F design & impl approaches:
  1. LAC : Start centrally, expand gradually; first T, then F; mainly LDSW
  2. ECA : Countrywide; first T, then F; hybrid COTS+LDSW; ICT specialist in TTs
  3. AFR, MNA : Mainly for central gov; mostly F; based on COTS
  4. EAP, SAR : Countrywide; mostly T; based on COTS

T/F Design and Implementation - Regional Approach

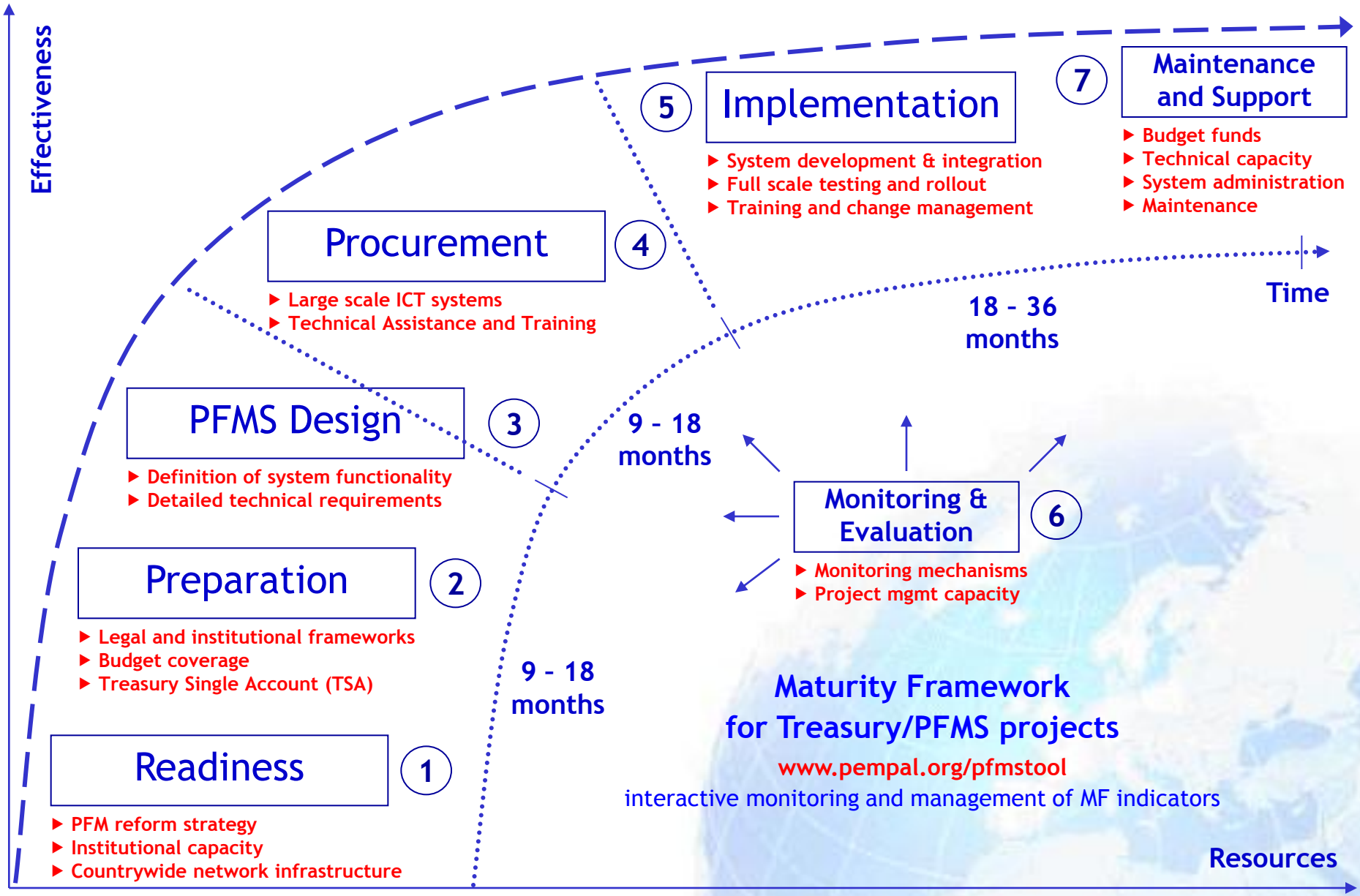
Region	# Cnty	# Prj	T/F	Scope	ASW	T/F Core	T/F #PP	ICT in TT
LAC	13	29	T >> F	C >> C+L	LDSW	Mixed	> 3	TT+Cons
ECA	12	14	T >> F	C+L	COTS+LDSW	Yes	<=3	TT
AFR	14	22	F	C	COTS	No	> 3	Cons
MNA	2	2	F	C	COTS	No	> 3	Cons
EAP	7	9	T	C+L	COTS	Mixed	<=3	TT+Cons
SAR	3	7	T	C+L	COTS	Yes	<=3	Cons
	51	83						

- 89% of completed T/F operational (29 full + 19 pilot impl)
- LCR is the most experienced region in design & implementation of FMIS

Maturity Framework for Treasury/PFMS projects

- A Community of Practice for Treasury Managers was established in June 2006 as part of the Public Expenditure Management-Peer Assisted Learning (PEM-PAL) program (**www.pempal.org**)
- The Treasury / FMIS Maturity Framework (MF) was developed during the "PEM-PAL Workshop for Treasury Officials" in Ljubljana, Slovenia (June 2006) and updated twice so far (next update planned in May 2010).
- The Maturity Framework was designed to enhance learning and knowledge sharing among Heads of Treasury and related key officials in public expenditure management from 16 ECA countries.
- The Bank prepared a web site to publish the results and to facilitate interactive monitoring and management of proposed indicators (**www.pempal.org/pfmstool** currently being transferred to Ljubljana).

Treasury/FMIS Maturity Framework

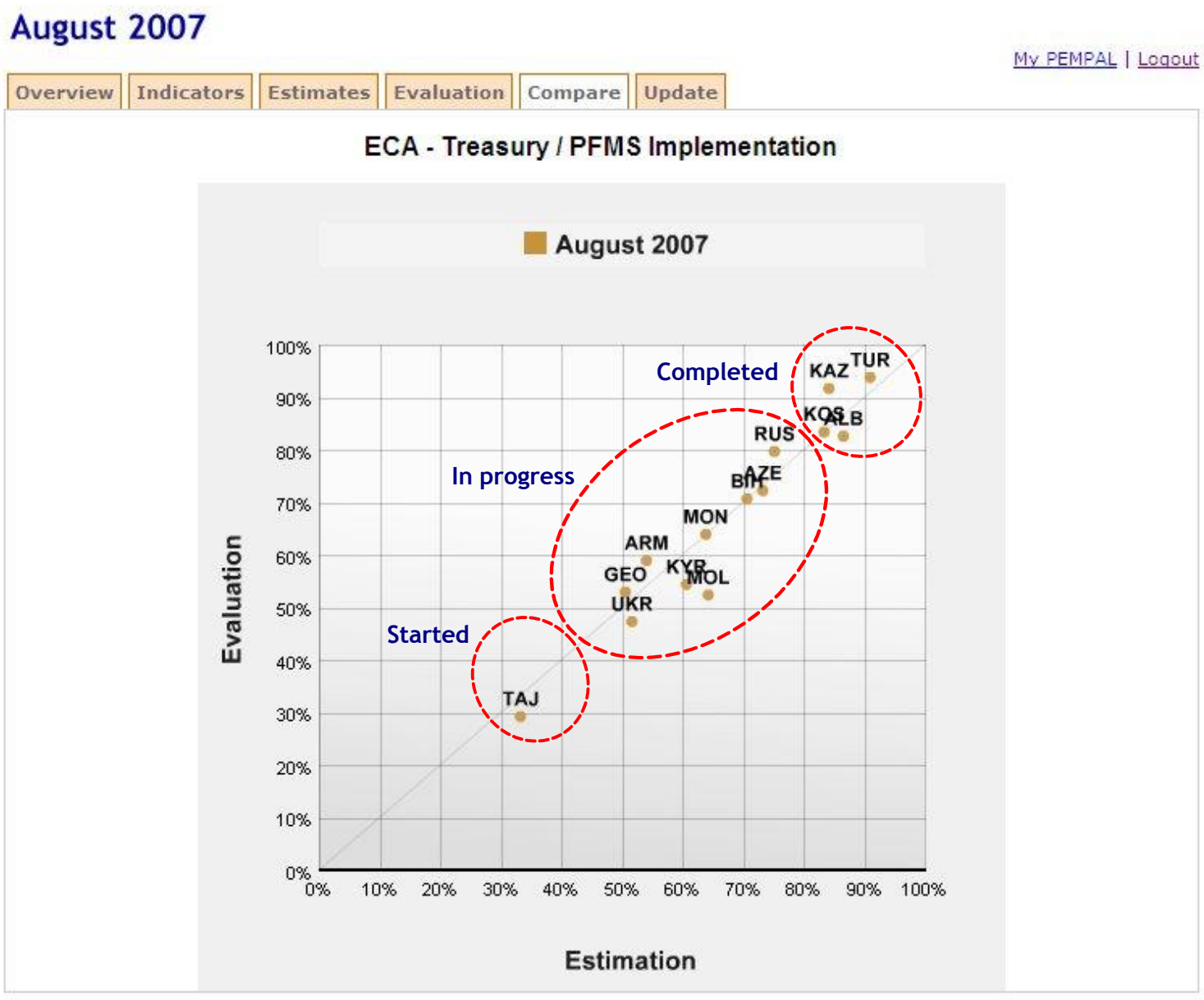


Maturity Framework for Treasury/PFMS projects

www.pempal.org/pfmstool

interactive monitoring and management of MF indicators

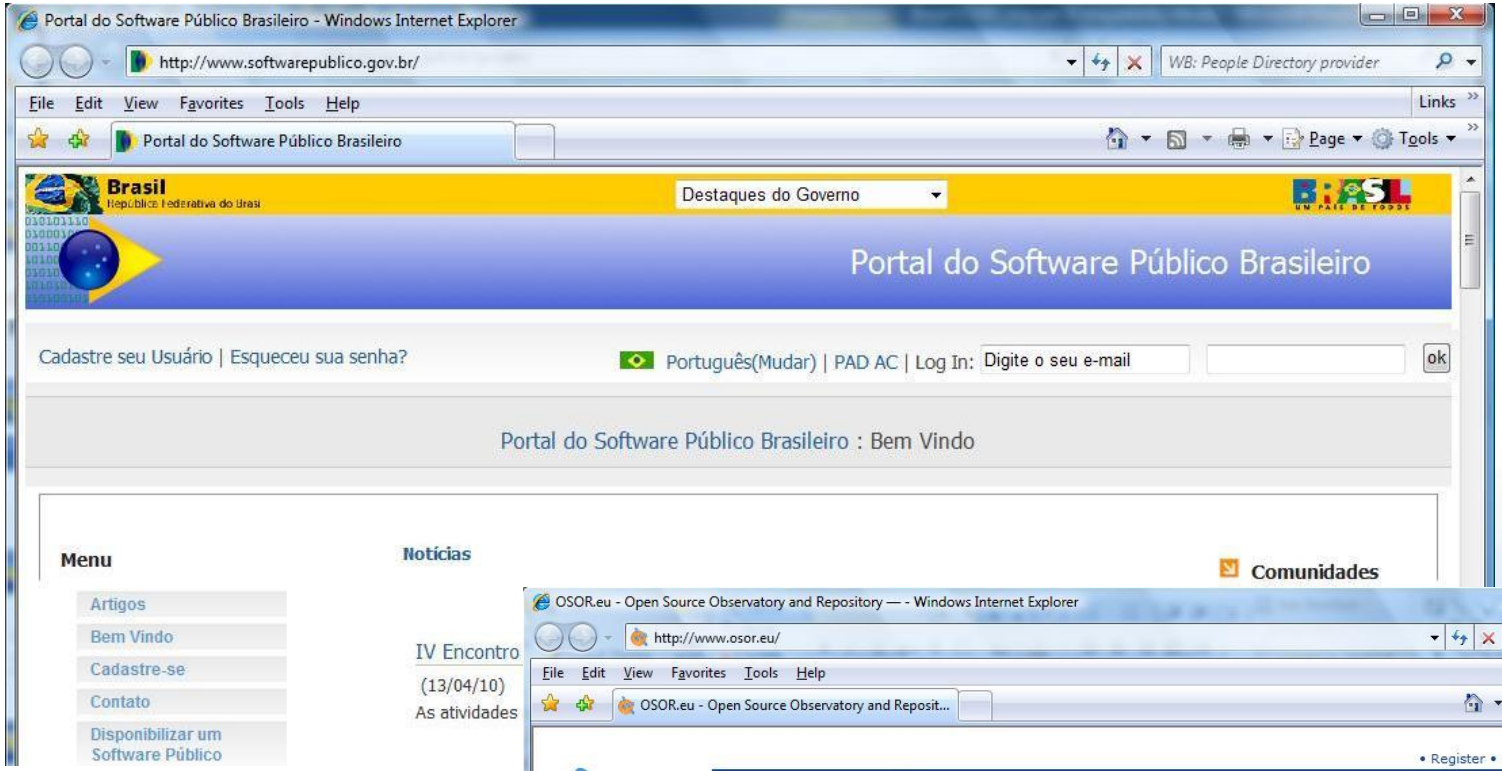
ECA Treasury/PFMS Development Status



PEM-PAL Treasury CoP

Open-Source in Public Sector

www.softwarepublico.gov.br



www.osor.eu

Challenges

- Government ownership and adequate budget support
- Stability of PFM rules and regulations (frequent legal/policy changes)
- Recruitment and sustainability of ICT specialists in public sector
- Existence of a reliable countrywide network infrastructure
- Realistic ICT cost estimates to reduce procurement risks
- Web based applications & **open systems** to reduce cost & duration of implementation
- Proper requirements for Records Management, Information/System Security and Digital Signature in design
- Coordination with e-Gov activities (interoperability & resource sharing)
- Strengthening project management, monitoring and evaluation skills

Conclusions

- **Commitment and support:** High level commitment and proper budgetary support is essential for successful implementation and sustainability of FMIS.
- **From Treasury to Integrated FMIS:** Within the last decade, emphasis has been given to the development of integrated FMIS solutions after the initial Treasury development projects, benefiting from the developments in secure web-based PFM systems and open-source applications.
- **Capacity building:** Implementation of integrated FMIS solutions requires capacity building, proper training and professional technical assistance.
- **FMIS vs e-Government:** Integrated FMIS technical solutions need to be designed and implemented as a part of e-Government strategy/program.
- **Financial Management Information System:** Integrated FMIS is not only a tool to improve operational efficiency and accountability, but also a key decision support mechanism for public financial managers.


Gracias