

BANK SUPERVISION APPLICATION



Enabling Bank Supervision Functions

June 2019





THE PROJECT





HISTORY

What is BSA?

Bank **S**upervision **A**pplication, web-based supervision application, responsible for the safe submission of financial statements, validation and analysis of prudential indicators.

- Used by Central Banks and other Financial Regulatory Authorities.

Background

BSA Project was initiated in 1997 driven by the SADC Central Banks, Ethiopia, Kenya and Uganda.

- Version 1.0 released in 2003. Version 4.0 since 2018.

Objectives

Harmonize the Banking Supervision functions within the Central Banks.

- Automate supervision functions and enhance the data quality on prudential analysis.

Vision

Application robustness with reduced operational costs through more users adhesion.

- Establishment of a private cloud to allow the utilization of BSA as a service.

The BSO

BSA **S**upport **O**ffice to develop, maintain and provide a second level support for the users.

- Hosted by Banco de Moçambique.





EXPECTED BENEFITS

Best practices in the Banking Supervision activities
(Basel Principles)

Integrated solution for Supervisory activities
(Licensing, Off-site Analysis, Onsite Inspection, Complaints)

Workflows and automation of procedures

More time for analysis tasks

Integrated Bank Supervision information for Decisions Maker
(Financial Information, Institutions' Profile, Shared Documents, Complaints)

Efficient, timely and secure communication between Regulator and Supervised Institutions

All future requirements can be accommodated on the BSA platforms

Product specifically designed for supervision activities

Managed by Central Banks Expertise

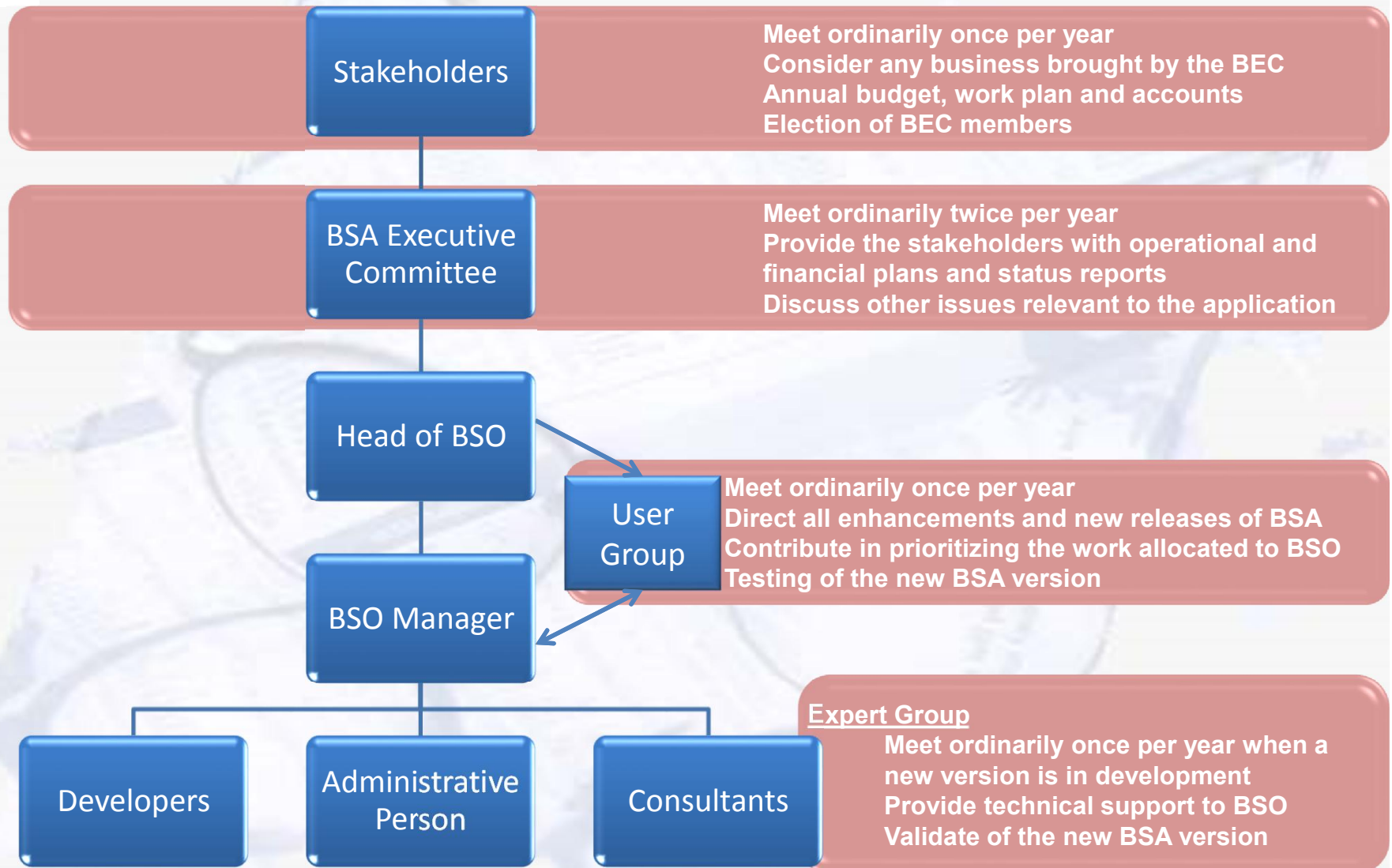
Combined expertise and knowledge of different Regulators

The support is guaranteed by technicians with Banking skills





GOVERNANCE





MODUS OPERANDI

BSA is not a commercial product

- The Product was specifically developed for Central Banks and Financial Authorities
- The solution is supported by subscribed Regulatory Authorities
- The Support Business Model is not profit oriented.

Quality is not an issue

- The product was developed by Central Banks expertise with the requirement received from Banking supervision Subcommittee, which means that the quality of the product is not questionable

Product growth is determined by the Regulators

- Improved from Version 1.0 to 4.0
- Implementation of new versions at no additional cost to Regulators



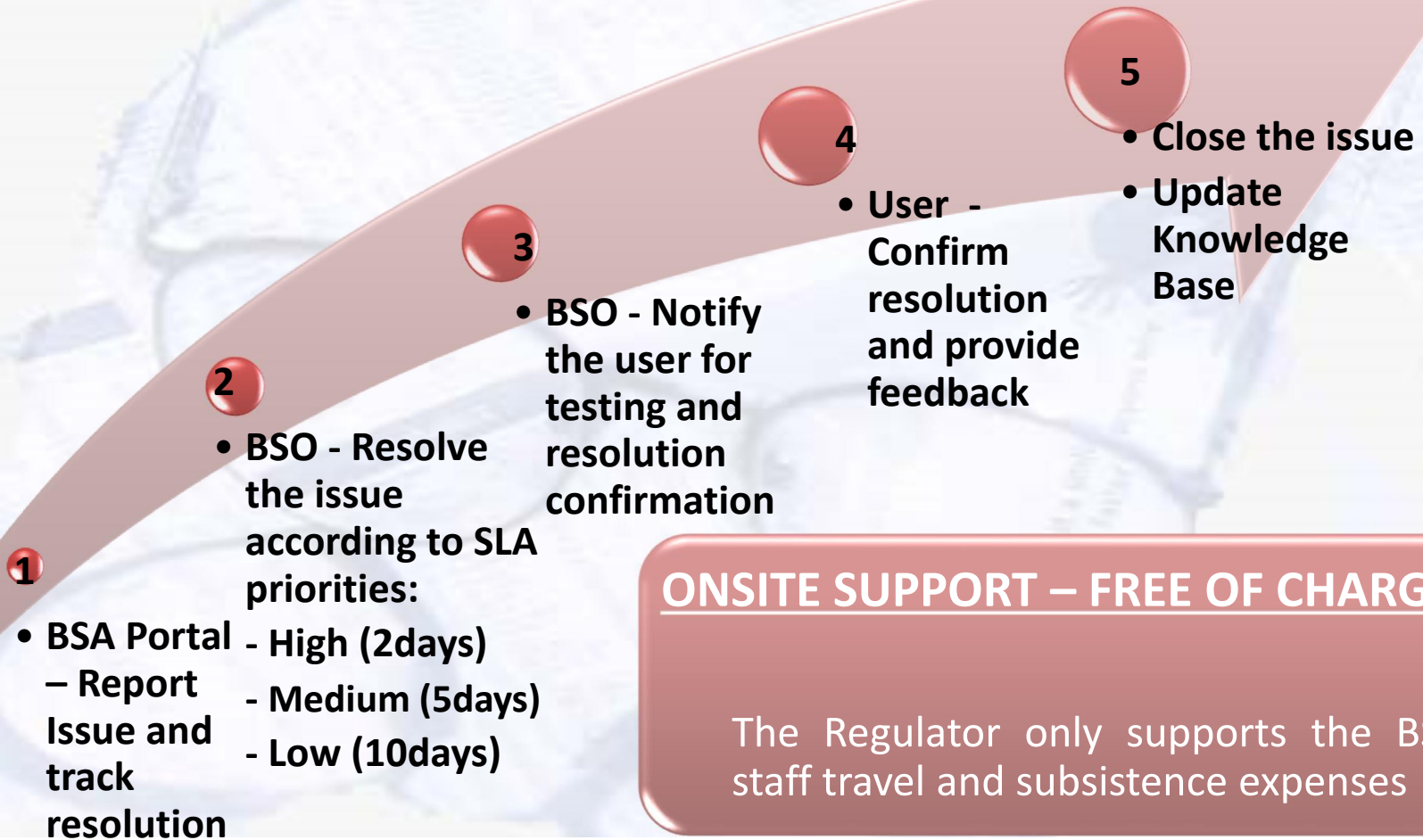


MODUS OPERANDI – DEVELOPMENT PROCEDURES





MODUS OPERANDI – SUPPORT PROCEDURES

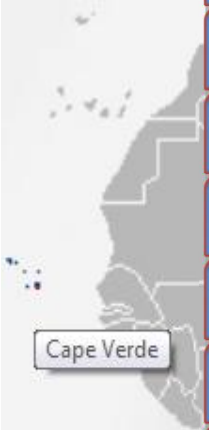




COVERAGE

- 1 BANCO DE CABO VERDE
- 2 BANCO DE MOÇAMBIQUE
- 3 BANQUE CENTRALE DU CONGO
- 4 BANQUE DE LA RÉPUBLIQUE DE BURUNDI
- 5 BANKY FOIBEN'I MADAGASIKARA
- 6 FINANCIAL SERVICES REGULATORY AUTHORITY – ESWATINI
- 7 THE BANK OF UGANDA
- 8 THE BANK OF ZAMBIA
- 9 THE CENTRAL BANK OF ESWATINI
- 10 THE CENTRAL BANK OF KENYA
- 11 THE CENTRAL BANK OF LESOTHO
- 12 THE NATIONAL BANK OF ETHIOPIA
- 13 THE RESERVE BANK OF MALAWI
- 14 THE RESERVE BANK OF ZIMBABWE

UPCOMING
 15 – CENTRAL BANK OF DJIBOUTI
 16 – BANCO CENTRAL DE TIMOR-LESTE





COVERAGE

BANKING

Licensing	Regulation	Prudential Supervision	Behavioral Supervision	Financial Stability	Capital Markets	National Payment	Research	Statistics	Exchange Control
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NON BANKING

Licensing	Regulation	Insurance	Pensions	Credit & Saving
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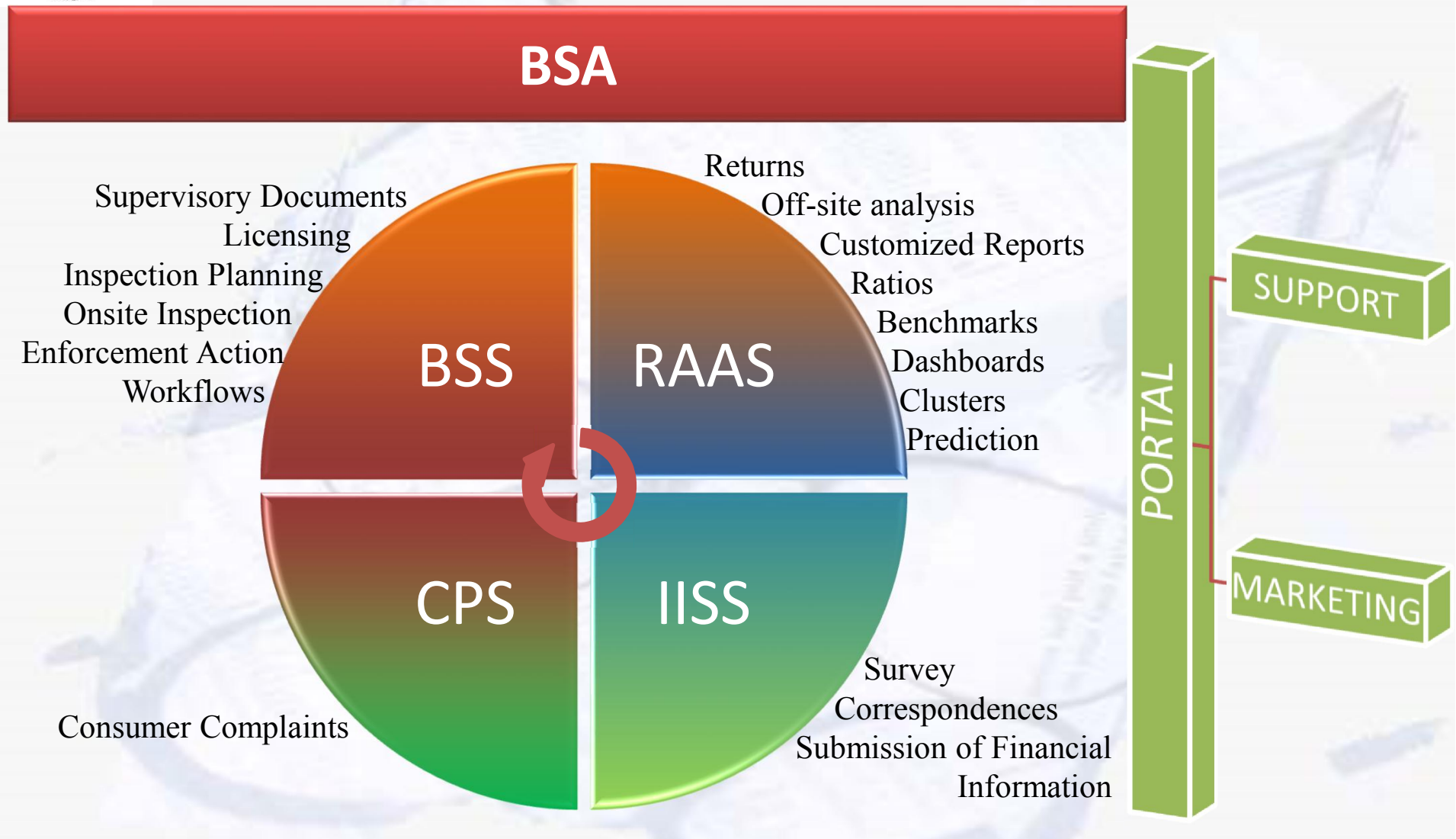


GENERAL FUNCIONALITIES





SYSTEM COMPONENTS AND MODULES





SECURITY MEASURES

- Usage of SSL protocol in communications
- Encryption of submitted information
- Inactive session expiration

Secure Communications

Identification and Authentication

- Integration with Active Directory
- Control of password history
- Check of Complex password
- Block users after invalid attempts
- Encryption of user's password and sessions

- Capturing of all user operations
- Read-only audit report

Audit and Monitoring

Authorization

- Access Segregation according to profile
- Levels of authorization for submitted information
- User access control





MAIN FUNCTIONALITIES

System navigation icons: Home, IISS, Help, and user profile for Njaka ANDRIANARISOA (Last Login: Wednesday, June 05, 2019 11:27:41 AM, Log Out).

Bank Supervision Office

Not Submitted Returns

YOUR PASSWORD EXPIRES IN 4 DAYS, DO YOU WANT TO CHANGE NOW? Yes No

Returns not Submitted

Return	Return Name	Frequency	Period	Days Late	Return Group	Return Name	Frequency	Period	Days Late	
DAILY RATES		Daily	2019/05/31	0	Situation mensuelle - Banque et EF		Monthly	Apr 2019	23	
DAILY RATES		Daily	2019/05/30	0						
DAILY RATES		Daily	2019/06/04	0						
CB 304 - Etat de contrôle du ratio de position de change [Journalier]		Daily	2019/06/04	0						
CB 307 - Etat de contrôle des activités non bancaires [Mensuel]		Monthly	Apr 2019	23						
CB 102 - Etat de concours à l'économie - Ariary [Mensuel]		Monthly	Apr 2019	23						
CB 305 - Engagements sur les Administrateurs, Dirigeants et CAC [Mensuel]		Monthly	Apr 2019	23						
CB 102 - Etat de concours à l'économie - Devises [Mensuel]		Monthly	Apr 2019	23						
CB Top 50 engagements [Mensuel]		Monthly	Apr 2019	23						
CB 303 - Etat de contrôle des grands risques [Mensuel]		Monthly	Apr 2019	23						
CB 302 - Etat de contrôle du ratio de solvabilité - Annexe [Mensuel]		Monthly	Apr 2019	23						
CB 107 - Détails des comptes 13 et 14 [Mensuel]		Monthly	Apr 2019	23						
CB 303 - Etat de contrôle des grands risques - Annexe [Mensuel]		Monthly	Apr 2019	23						
CB 302 - Etat de contrôle du ratio de solvabilité [Mensuel]		Monthly	Apr 2019	23						
CB 301 - Etat de contrôle des Fonds Propres Disponibles [Mensuel]		Monthly	Apr 2019	23						
CB 103 - Appendice à l'état de concours à l'économie - Ariary [Mensuel]		Monthly	Apr 2019	23						
CB 304 - Etat de contrôle du ratio de position de change [Mensuel]		Monthly	Apr 2019	23						

Bank Supervision Application- v 4.0
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Contact: (+258) 21354600 | bsosupport@bou.or.ug





MAIN FUNCTIONALITIES



Paulo Mapsanganhe Last Login: Tuesday, April 25, 2017 10:37:05 AM [Log Out](#)



Bank Supervision Office



- Administration
- BSS
- RAAS
- IISS
- CPS
- Help

Tasks

Workflow	Process name	Topic	Assigned By	Received Date	Task due Date	
Relatório de Inspeção	Received by Director	Relatório final 2017	20110044	4/19/2017 10:48:16 AM	4/20/2017 10:48:16 AM	85
Inspeção on-site	Received by Director	PCB: Test for Version 4	20070025	4/18/2017 4:37:38 PM	4/28/2017 4:37:38 PM	85
Annual Plan	Received by Director	2018	20070025	4/18/2017 3:17:19 PM	4/25/2017 3:17:19 PM	85



Ratio Name	April	March	February
Operating cash flow ratio	0.45	0.45	0.46
Current Ratio	0.29	0.3	0.31
Ratio leve	0.93	0.94	1.4



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bmsupport@bancomoc.mz

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MAIN FUNCTIONALITIES

EXTERNAL USERS

INTERNAL USERS

Process 3

Process 3

5 Validation

6 Reports

Item Description	Value
1. Interest income	B13
2. Commission Income	B14
3. Income on equity investments	B15
4. Other income	B16
5. Gross operating income	B17
6. Interest expenses	B20
7. Staff salaries and benefits	B21
8. Other Expenses	B22
9. Total Expenses	B23
10. Net operating income (loss)	B25

Upload



Validation

Notifications 4





MAIN FUNCTIONALITIES

Cross Table Report

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1		Bank Supervision Office																	
2		Av. 25 de Setembro nº1695																	
3		Maputo																	
4																			DATE PRINTED: 2017/07/05
5		Operational Ratios and Income Items																	
6		PERIOD: 01/01/2017 - 31/03/2017																	
7																			
8		Bank of Investment Africa						Paulo Commercial Bank						Industry					
9		2017/01/31		2017/02/28		2017/03/31		2017/01/31		2017/02/28		2017/03/31		2017/01/31		2017/02/28		2017/03/31	
10		Value	Weight	Value	Weight	Value	Weight	Value	Weight	Value	Weight	Value	Weight	Sum	Average	Sum	Average	Sum	Average
11	Current Ratio	0	-	0,18	24,00%	4	440,00%	0,1	27,00%	4	541,00%	0,48	53,00%	0,37	-	0,74	-	0,91	-
12	Operating cash flow ratio	0	-	0,07	13,00%	2,22	278,00%	0,04	21,00%	2,22	411,00%	0,55	69,00%	0,19	-	0,54	-	0,8	-
13	1. Interest income on update:	7	3,00%	100	35,00%	4	13,00%	100	48,00%	36	13,00%	30	15	209	104	284	142	242	168
14	2. Commission Income	0	-	15	6,00%	30	10,00%	15	15,00%	30	12,00%	5	2,00%	100	50	260	130	314	157
15																			
16		Excellent																	
17		Good																	
18		Fair																	
19		Poor																	
20		Very Poor																	
21																			



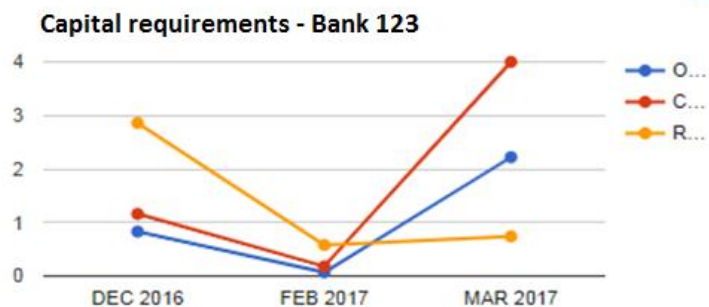
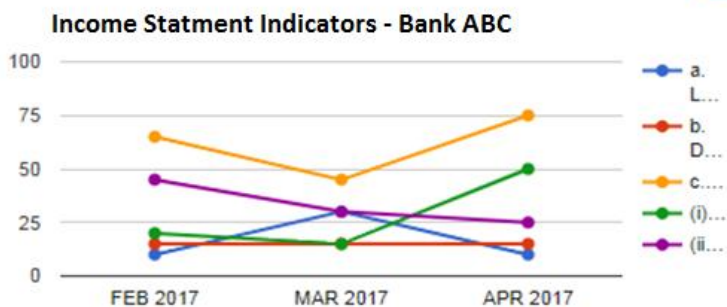
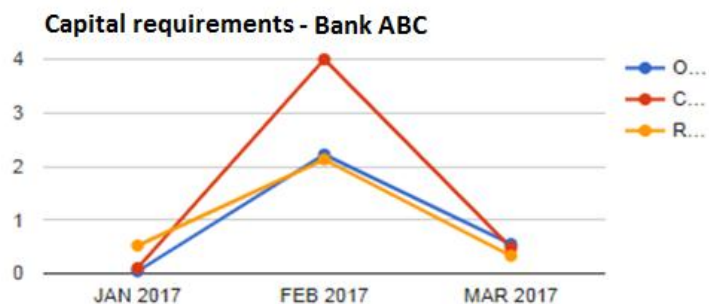
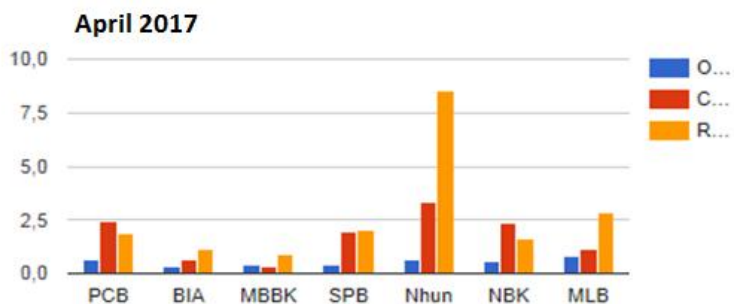


MAIN FUNCTIONALITIES

Dashboards

Graphical Evolution

Pre-Defined Dashboard





MAIN FUNCTIONALITIES

Cluster Analysis

View Cluster Analysis

Search

Segmentation Type User Defined Formula Key-Mean Algorithm

Segmentation Description Segmentation 4

From Date 01/02/2017 To 28/02/2017

Frequency Select an Option

[Preview](#)

Cluster	Institution	Teste	Teste CR	Ultimo Teste
2	Barclays Bank Moçambique, SA.	0,95	0,25	
1	Standard Bank, SA.	0,15	0,85	0,35
1	Banco Comercial e de Investimentos, SA.	0,8	0,5	
1	Gapi Sociedade de Investimento, SA.	0,65	0,5	0,8





MAIN FUNCTIONALITIES

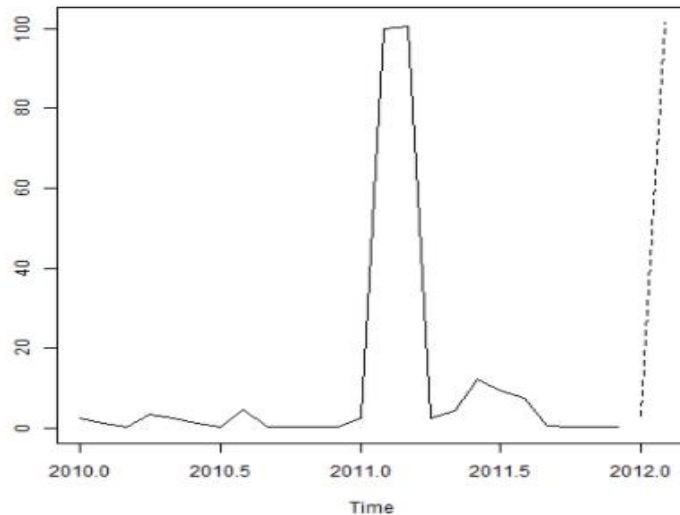
Prediction

Time Series Prediction

Time Series Prediction

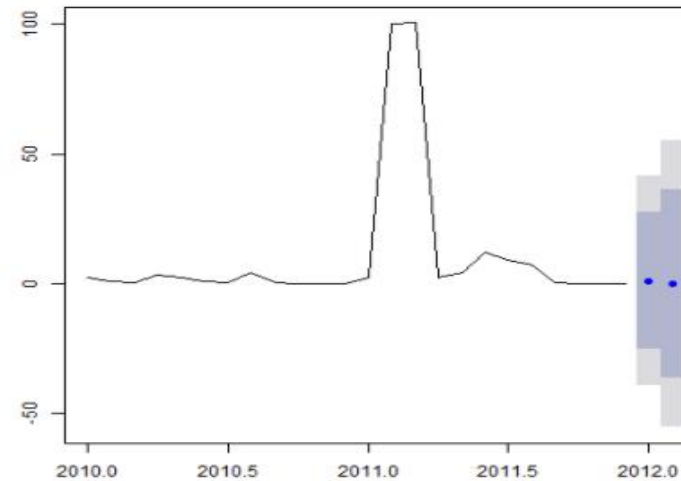
Institution: Paulo Commercial Bank
 Ratio Name: Operating cash flow ratio
 Period: 5/26/2017 12:12:34 PM
 Result: Successful

Holt-Winters



ARIMA

Forecasts from ARIMA(0,0,1) with zero mean



Start Date	End Date	ARIMA	Holt-Winters
6/1/2017 12:00:00 AM	6/30/2017 12:00:00 AM	1.1524	2.9405
6/1/2017 12:00:00 AM	6/30/2017 12:00:00 AM	0	101.4282





BUSINESS USER EXPERIENCE





USER EXPERIENCE



PRESENTATION BY SAMUEL MWALE

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COMMUNITY OF AFRICAN CENTRAL BANKS,

CAIRO - EGYPT

JUNE 2019





USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

PRESENTATION OUTLINE

- Risk Analysis Automated System (RAAS) Output
- Bank Supervision System (BSS) Output
- Institutional Information Submission System Output





USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

Risk Analysis Automated System

- In a world where there is data glut and there is need to timeously make data-driven decisions and policies the need for a system/ platform that not only allows for submission of templates but more importantly having analytical and aggregation functionalities becomes imperative.
- Viewing submissions only without putting meaning to submitted data is an exercise in futility.





USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

Risk Analysis Automated System

- Gone are the days when analysts spent **MORE** time manually preparing reports and **LESS** time on data analytics which is more important for decision making and policy formulation.
- The RAAS module of BSA has integrated tools that allow for analysis of data from both **Standard Returns** (Standard data format, and standard width & length) and **Dynamic Returns** (Variable data format and variable length).





USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

Risk Analysis Automated System

- Reports generation is **FLEXIBLE** as report items (ratios, return items, and institutions) can either be predefined (Customized Reports) or can be determined at run time (point of report generation).
- Frequently generated reports can be saved for **REUSE** at later dates with changed periods, and are modifiable at run time.
- Efficient and Consistent





USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

Risk Analysis Automated System

- For Customised report, at the click of a button you get all the Tables, Graphs, Charts, Rankings etc as defined during report customization.
- Reduction of regulatory burden on banks by having one point of entry of **similar** returns and having several reports (output) – for the various divisions in the central bank (e.g. Bank Supervision and Economic Research for the Weekly Return (Loan, Deposits, and Rates)).





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Risk Analysis Automated System

For Example

Weekly Loans and Deposits (BSD)

Weekly Deposits and Lending Rates (Economic Research)

Foreign Currency Exposures

Demonstration of Cross Report Generation.





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Risk Analysis Automated System

DASHBOARDS

- **Home Page Dashboard** – Displayed on Home Page for ALL users. Gives a snapshot of institutions performance for selected indicators.
 - Display is Graphical or Tabular and Variable or Evolution.
- **User Specific Dashboard** - is user defined and is customizable.





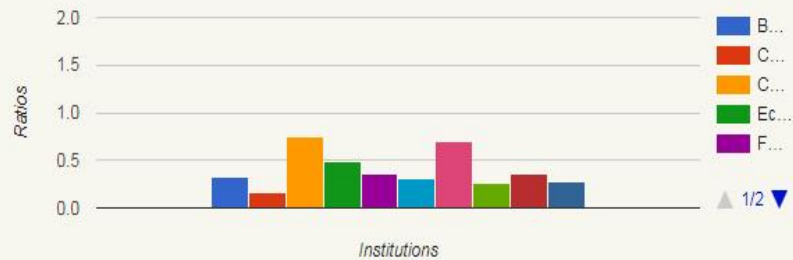
USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

Risk Analysis Automated System

HOMEPAGE GENERIC DASHBOARD

Browser address: <https://bsa.rbz.co.zw/live/Default.aspx>

ANNUAL INSPECTION PLAN	REQUEST FOR ANNUAL SUPERVISORY PLAN	2019	smwale	3/14/2019 12:39:37 PM	3/14/2019 12:39:37 PM
ANNUAL SUPERVISORY PLAN SETUP	REQUEST FOR ANNUAL SUPERVISORY PLAN	2017	smwale	11/7/2017 11:24:04 AM	11/7/2017 11:24:04 AM
CORRESPONDENCES/ LETTERS	CORRESPONDENCE RECEIVED/ GENERATE CORRESPONDENCE	DEMONSTRATION 2 -FSRA-SWAZILAND	smwale	11/7/2017 10:06:26 AM	11/7/2017 10:06:26 AM
CORRESPONDENCES/ LETTERS	CORRESPONDENCE RECEIVED/ GENERATE CORRESPONDENCE	BSA USERS MINUTES - HARARE - 2015	smwale	8/10/2017 11:57:15 AM	8/10/2017 11:57:15 AM
CORRESPONDENCES/ LETTERS	CORRESPONDENCE RECEIVED/ GENERATE CORRESPONDENCE	Stanbic Bank Zimbabwe Review of Tariff of Charges on Existing Products	smwale	3/24/2017 12:02:06 PM	3/24/2017 12:02:06 PM
CORRESPONDENCE	FINANCIAL SOUNDNESS INDICATORS READY	Q4 2016 OFFISTE ANALYSIS REPORT - ZB BUILDING SOCIETY	smwale	3/9/2017 9:24:14 AM	3/9/2017 9:24:14 AM
LICENCING OF BANKING INSTITUTIONS	RECEIVED BY GOVERNOR	NATIONAL BUILDING SOCIETY	smwale	4/11/2016 12:38:11 PM	4/11/2016 12:38:11 PM
LICENCING OF BANKING INSTITUTIONS	RECEIVED BY GOVERNOR	CENTRAL AFRICAN BUILDING SOCIETY	smwale	4/7/2016 12:39:18 PM	4/7/2016 12:39:18 PM





USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

Risk Analysis Automated System

USER DEFINED DASHBOARD

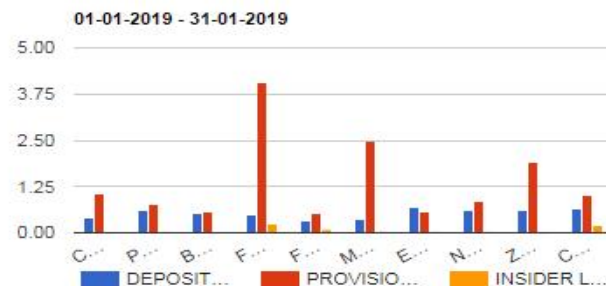
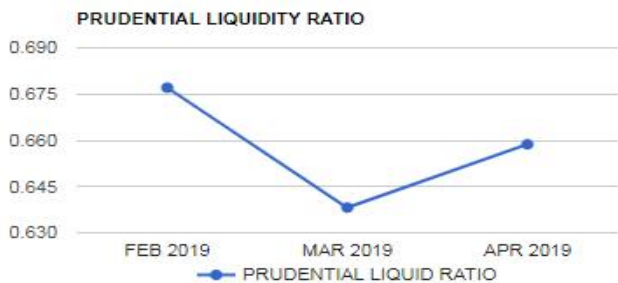
o.zw/live/RAAS/zraas_graphicevolution.aspx



- BSS
- RAAS
- IISS
- CPS
- Help

Graphical Evolution

Pre-Defined Dashboard





USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

Bank Supervision System

- The hallmark of the BSS module are the workflows which are user defined hence conforming to supervisor specific business rules.
- In Zimbabwe we have defined and used the following workflows:
 - Licencing of Institutions
 - Renewal of Licence
 - Onsite Examination
 - Off-site Analysis





USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

Bank Supervision System

ONSITE EXAMINATION

- Allows for simultaneous examination of several defined functional areas, with separate functional area report output.
- Allows for capturing of examination notes enabling tracking of examination progress by superiors who most of the times may be offsite.
- Consolidated examination report uploaded into the system, attached to workflow for storage and history.





USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

Bank Supervision System

ONSITE EXAMINATION

- Allows for scheduling of meetings with institutions being examined.





USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

Bank Supervision System

MERITS OF WORKFLOWS

- Easy tracking of work as workflow history and tracking is a standard feature in BSA.
- Introduces efficiency and accountability – reduces turnaround time (Offsite Analysis and Correspondences).
- Cost effective – promotes paperless work environment.





USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

Institutional Information Submission System

- Gives alerts of **RETURNS NOT SUBMITTED** – Internal Compliance function immensely benefited from this functionality, as returns submission compliance is automatically tracked.
- **CORRESPONDENCE** Functionality – for receipt and dispatch of correspondence between supervised institutions and the Central Bank ; and among divisions/ departments within the Central Bank.





USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

Institutional Information Submission System

CORRESPONDENCE Functionality

- This together with the Correspondence Workflow under BSS helped reduce cost of printing paper by not less than **75%** when printing is done at point of correspondence dispatch.





USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

BEAUTY OF BSA

- **Home grown** Solution – Developed collaboratively by African Central Banks for African Central Banks.
- Interactive and User Friendly Menu-driven Interface.
- Multilingual Interface (English, French, Portuguese).
- **Scalable** in sync with technological advancements and evolving user requirements.
- An Integrated system.
- User Customizable.
- **Affordable** – No hidden costs.





USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

INDEPTH APPRECIATION

- This presentation was just a snippet.
- You are welcome to Zimbabwe for study tours to get an in-depth appreciation of BSA.
- We stand ready to assist and work with those countries that will decide to become members of the growing BSA family.





USER EXPERIENCE – RESERVE BANK OF ZIMBABWE

INDEPTH APPRECIATION

- **Write To:**

**The Governor
Reserve Bank of Zimbabwe
80 Samora Machel Avenue
P.O. Box 1283
Harare
Zimbabwe**

jpmangudya@rbz.co.zw

**The Director
Bank Supervision
80 Samora Machel Avenue
Reserve Bank of Zimbabwe
P.O. Box 1283
Harare
Zimbabwe**

nmataruka@rbz.co.zw





IMPLEMENTATION PROCESS





COMPARING BSA WITH SIMILAR APPLICATIONS

OTHERS



- Recoded to meet Regulator needs
- Respond specific areas of business
- Renewable license with limited users
- High License cost
- Support and upgrades – With charges

BSA



- Fully customizable to meet Regulator needs
- Covers different areas of business
- Perpetual license with unlimited users
- Low License cost
- Support and upgrades – Free of charge





IMPLEMENTATION STEPS



Application exploitation

Signing of agreement and license payment

Technical conditions and historical data migration

Deployment and maintenance

- Workshop
- Online presentation
- Fly Me a presenter
- Visit BSO
- Visit a user regulator





WORKSHOP



01
August
2019

AddisAbaba
Ethiopia





CONTACTS

Support

- BSA Support Office (BSO) is established and managed by Banco de Moçambique, Central Bank of Republic of Mozambique, responsible to render a second level support and to provide on-going maintenance and application support.

For further information, please contact the BSO :

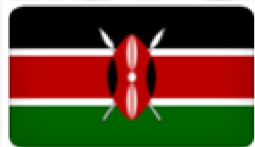
- Tel: +258 21354683/4
- Fax: +258 21323247
- Email: bso_support@bancomoc.mz
- Web: <https://www.bsa.org.mz>
- Address:

Banco de Moçambique
Bank Supervision Application Support Office
Av. 25 de Setembro, 1695
Maputo-Moçambique





MUITO OBRIGADO!



Kenya



Lesotho



Madagascar



Ethiopia



Malawi



Democratic
Republic of Congo



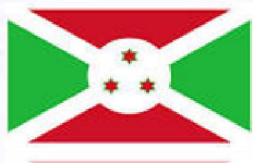
Mozambique



Cape Verde



Eswatini



Burundi



Zimbabwe



Zambia



Uganda

THANK YOU!

MERCI BEAUCOUP!

