

openIMIS

Gumzo ya Mwezi 02/09/2019



Agenda

- Bluesquare:
 - who we are
 - our engagement towards openIMIS community
 - our methodology
- Achieved
 - what we delivered this month
- Roadmap
 - what we will deliver and what are our dependencies





BLUESQUARE

www.bluesquarehub.com

Delivering
innovative
technology for
better lives.

Fall 2018 —

what we do

COUNTRY LEVEL DATA SYSTEMS

24 COUNTRIES

We build technologies that enhance governmental health data systems with a focus on three markets:

HEALTH FINANCING DATA SYSTEMS

- Data systems for purchasers, health insurance, Ministries of Health
- Example: Develop a Pay for Performance data system in Kyrgyz hospitals

GOVERNMENT HEALTH DATA WAREHOUSES

- Example: The health data warehouse in Morocco

DISEASE OR THEMATIC DATA SYSTEMS

- Diabetes
- HIV
- Tuberculosis
- Malaria
- Immunization systems
- Vector Borne eradication systems (i.e. sleeping sickness)
- Family Planning
- Emergency Obstetric Care

Bluesquare develops these data systems based on a suite of in-house software products connected to DHIS2 a popular open source data management platform used by over 40 governments.

How we do IT products and data services

We deliver technologies and services that strengthen governmental health data systems, mainly:

Hesabu (aka ORBF)

- An open sourced rule engine that allows complex calculations in DHIS2, a popular open source data management platform. This is particularly useful for health financing data systems.

Data Viz

- A public web dashboard that allows showcasing results.

Modeling and data science

- Statistical analysis, Data cleaning, Modeling & machine learning and analysis automation to help customers bring value out of their health data.

Bluesquare suite of in-house software products and services allow collecting, computing, analyzing and visualizing data in a intelligent and friendly manner.

Bluesquare: our engagement towards openIMIS community

We believe that health insurance will be at the heart of the UHC agenda in many countries.

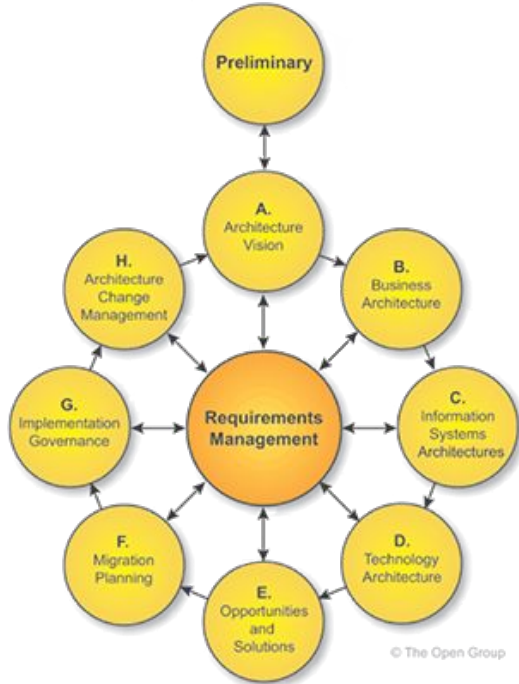
openIMIS modular transformation is an opportunity to develop code that can be used at scale to help provide health services “for the global good” (i.e. exact DNA of Bluesquare).

Creating synergies with our existing and future health-financing portfolio, promoting the tool in the countries where we operate.



Bluesquare: our methodology

Our approach to deliver the openMIS modules borrows several concepts from TOGAF, most important one being the ADM (Architecture Development Method):



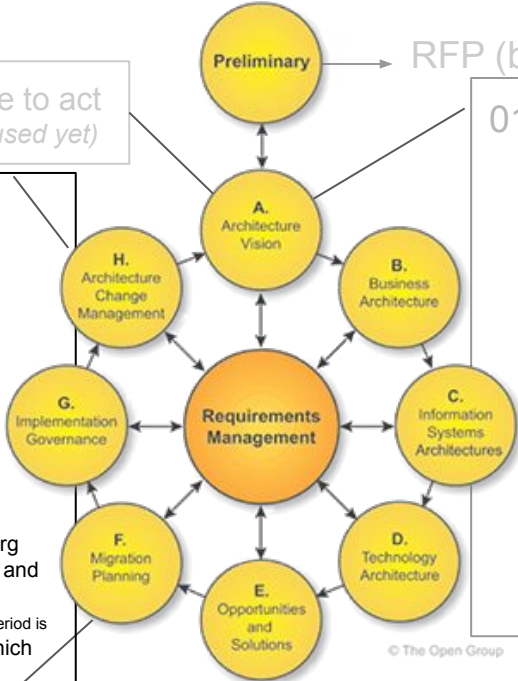
- Iterative, ensuring pragmatism and responsiveness in delivered solution
- We strive to keep things simple: we aim to use the TOGAF framework as a guide not a rule book. Where we feel it will serve this project we will make use of it. However, our proposed approach is much lighter than a traditional TOGAF implementation effort.
- It helps any community member to find/contribute to the appropriate part of the system.

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Achieved (Iteration 1): FHIR API



No architecture change to act
(but deliverable not really used yet)

01/2019: start of work

- Brainstorming (blsq internal)
- Conceptual architecture documentation (in openMIS wiki)
- Architecture Presentations (16/01 and 23/01 + follow-up calls) 6 m/d
- Technology stack proposal
- Migration strategy & roadmap
- PoC on proposed technology stack (preparation 'hands on' session at Bonn Workshop) 14 m/d

Under progress: Objective iteration 1: FHIR API

- 03/2019: 13 m/d
- 04/2019: 12 m/d
- 05/2019: 4 m/d
- 06/2019: 0,5 m/d
- 07/2019: 0 m/d
- 08/2019: 1,5 m/d
- setup & maintenance openimis.blusquare.org
- help analysing source of problems (cfr.Jira) and possible solutions
- ... one of them is [ONCO-98](#) (Eligibility Validity Period is not included in Response of Eligibility Response), for which we made some prep work: [PR](#)

TODO (Blusquare): follow up, bug fix and adaptations

Bonn Workshop
 Demonstrated technology stack and migration strategy
 - Agenda alignments
 4 m/d

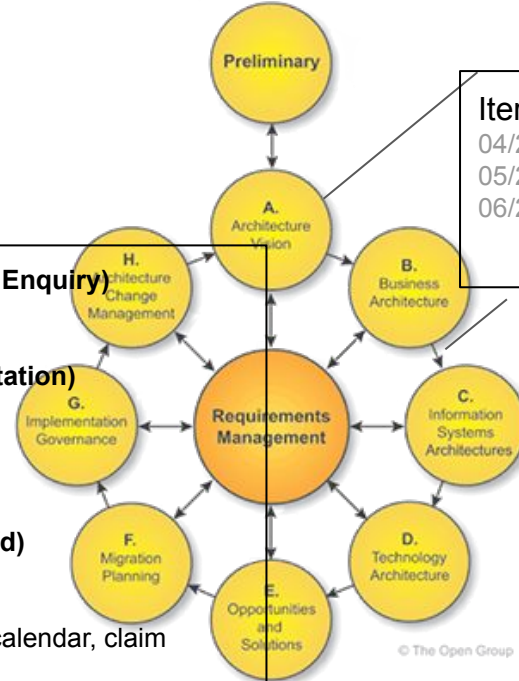


Achieved (Iteration 2): All Proxies

Under maintenance:
Objective iteration 1: All proxy (frontend) setup
05/2019: 10 m/d
06/2019: 8,5 m/d
07/2019: CLOSED
Enquiry screen moved into the claim module scope!



Achieved (Iteration 3): Claim Module



Iteration 3:

- 04/2019 : Claim module scope document (draft) 2 m/d
- 05/2019 : Mapping attempt to JLN business processes 0.5 m/d
- 06/2019 : Claim main screen mockups (+ sessions with implementors) 4,5 m/d

06/2019: Django Dynamic Rest > Graphene (GraphQL) 4 m/d

07/2019: 12 m/d (scope, design & Enquiry)

- Enquiry Screen
- Claim scope & Design

08/2019: 34 m/d (Claim implementation)

- Health Facility Claims
- Reviews
- Batch (screens only)



TODO Bluesquare (remains 33 m/d)



- Batch backend
- Security
- Nepali context: calendar, claim attachments, ...
- 4 "week" iterations to go into "all the details"... and get ready for October release.
- Integrate with translation platform
- Run the [acceptance test](#) and start using [OMT](#) to track issues

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Generic Audit Log (last actions)

openIMIS 0.0.1 Insurees and Policies Claims Administration Tools Profile

Search Criteria

Region District Health Facility Claim Admin

Claim Status Entered Review Status Any Feedback Status Any Claim No. Insuree No. Main Diagnosis

Visit Date From Visit Date To Claimed Date From Claimed Date To

2 Claims Found

Claim No.	Health Facility	Claimed Date	Feedback Status	Review
CID00001	VIDS001 Viru Dispensary	03/01/2019	Idle	Idle
CIB00001	VHC001 Julioa Health Centre	22/12/2018	Idle	Idle

- ✔ Create Claim - Manth Aby (111111117) 2019-09-02 8:57
- ✔ Create Claim - Manth Ramy (111111114) 2019-09-02 6:30
- ⚠ Create Claim - arafat.mona (55557) 2019-09-02 6:31

Claimed amount must be > 0

Drawer displaying the last actions
... and their status

Mechanism is **completely generic**:

- in [openimis-fe-core_js](#)
 - “[JournalDrawer](#)” component
 - “[journalize](#)” decorator for module-specific graphql mutations (i.e. create/update/delete actions)
- in [openimis-be-core_py](#)
 - “[MutationLog](#)” entity
 - “[OpenIMISMutation](#)” graphql abstract relay

IMPACT:

We now have the choice to archive entities via

- version history (keep each versions, as it is now)
 - change log (keep delta changes)
- ... or both



Health Facility Claims

openMIS 0.01 Insurees and Policies ▾ Claims ▾ Administration ▾ Tools ▾ Profile ▾

Insuree enquiry...

Search Criteria

Region: [Search] × District: [Search] × Health Facility: [Search] × Claim Administrator: [Search] ×

Claim Status: Any ▾ Review Status: Any ▾ Feedback Status: Any ▾ Claim No.: _____ Insuree No.: _____ Claimed More Than: _____ Claimed Less Than: _____

Visit Date From: _____ Visit Date To: _____ Claimed Date From: _____ Claimed Date To: _____ Main Diagnosis: [Search] × Visit Type: Any ▾

11 Claims Found Selected 3 claim(s), total claimed amount: \$ 33,910, total approved amount: \$ 21,000 CLEAR SELECTION SELECT ALL

Claim No.	Health Facility	Claimed Date	Feedback Status	Review Status	Claimed	Approved	Status
CID00001	VIDS001 Viru Dispensary	03/01/2019	Idle	Idle	\$ 1,670	\$ 0	Entered
CIB00001	VIHC001 Juiŕiŕa Health Centre	22/12/2018	Idle	Idle	\$ 1,000	\$ 0	Entered
CIA00001	VIHOS001 Vida District Hospital	23/12/2018	Idle	Idle	\$ 11,810	\$ 0	Checked
RAD00001	RAHOS001 Rapta District Hospital	23/12/2018	Idle	Idle	\$ 21,400	\$ 0	Rejected
UPDH0001	UPHOS001 Uptol District Hospital	23/12/2018	Not Selected	Bypassed	\$ 21,690	\$ 21,000	Valuated
UPDH0002	UPHOS001 Uptol District Hospital	22/12/2018	Idle	Delivered	\$ 21,010	\$ 10	Checked
JADH0001	JMHOS001 Jambero District Hospital	22/12/2018	Not Selected	Not Selected	\$ 410	\$ 0	Valuated
CIA06601	JMHOS001 Jambero District Hospital	21/04/2019	Bypassed	Bypassed	\$ 11,410	\$ 7,900	Valuated
1	JMDP001 Huda Dispensary	22/04/2019	Not Selected	Bypassed	\$ 11,840	\$ 0	Valuated
911773b4	JMHOS001 Jambero District Hospital	02/09/2019	Any	Any	\$ 0	\$ 0	Rejected

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Cross-pages selection
Selection summary pane

User-select page size
(with limits)



Claim Edition

openMIS 0.01 Insurees and Policies Claims Administration Tools Profile

Insuree enquiry...

Claim CID00001

Health Facility	Insuree	Claimed Date	Visit Date From	Visit Date To
VIDS001 Viru Dispensary	Iilina Doni (105000002)	2019-01-03	2019-01-03	2019-01-03

Visit Type	Main Diagnosis	Guarantee No.	Claimed
Other	A009 Cholera, unspecified		\$ 1670

Sec Dg1	Sec Dg2	Sec Dg3	Sec Dg4

Explanation Adjustment

Services (\$ 1,650)

Service	Quantity	Price	Explanation	Justification
A1 General Consultation	1	\$ 400		
I113 BLOOD SUGAR-RANDOM	1	\$ 1250		
		\$		

Items (\$ 20)

Item	Quantity	Price	Explanation	Justification
0182 PARACETAMOL TABS	2	\$ 10		
		\$		

Auto-grow tables for services & items



Claim Review



openIMIS 0.0.1

Insurees and Policies ▾

Claims ▾

Administration ▾

Tools ▾

Profile ▾

🔍 Insuree enquiry...



Search Criteria

Region	District	Health Facility	Claim Administrator			
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>			
Claim Status	Review Status	Feedback Status	Claim No.	Insuree No.	Claimed More Than	Claimed Less Than
Checked ▾	Any ▾	Any ▾	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Visit Date From	Visit Date To	Claimed Date From	Claimed Date To	Main Diagnosis	Visit Type	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Any ▾	
Random Filter	Value Filter	Variance				
% 5	\$	% 10				

2 Claims Found

SELECT ALL

Claim No.	Health Facility	Claimed Date	Feedback Status	Review Status	Claimed	Approved	Status
CIA00001	VIHOS001 Vida District Hospital	23/12/2018	Feedback Status Idle	Review Status Idle	\$ 11,810	\$ 0	Checked
UPDH0002	UPHOS001 Uptol District Hospital	22/12/2018	Feedback Status Idle	Review Status Delivered	\$ 21,010	\$ 10	Checked

Rows Per Page 10 ▾ 1-2 of 2 < >



Feedback Edition

openIMIS 0.01 Insurees and Policies Claims Administration Tools Profile

Insuree enquiry

Claim CIA00001

Health Facility VIHOS001 Vida District Hospital	Insuree Ilina Ethu (10500001)	Claimed Date 2018-12-23	Visit Date From 2018-12-23	Visit Date To 2018-12-23
Visit Type Other	Main Diagnosis A011 Paratyphoid fever A	Guarantee No.	Claimed \$ 11810	
Sec Dg1	Sec Dg2	Sec Dg3	Sec Dg4	
Explanation	Adjustment			

Feedback

Feedback Date Claim Officer

Care Rendered Drugs Prescribed

Payment Asked Drugs Received

Overall Assessment

Very Bad Bad Not So Bad Rather Good Good Very Good

3 states switches:
Unknown
Yes
No



Claim Review Edition

Totals displayed as header (cfr. Nepali adaptation)

openMIS 0.0.1 Insurees and Policies ▾ Claims ▾ Administration ▾ Tools ▾ Profile ▾

< Claim UPDH0002

Health Facility UPHOS001 Uptol District Hospital	Insuree Listy Joseph (101000003)	Claimed Date 2018-12-22	Visit Date From 2018-12-22	Visit Date To 2018-12-22
Visit Type Referral	Main Diagnosis A038 Other shigellosis	Guarantee No.	Claimed \$ 21010	
Sec Dg1	Sec Dg2	Sec Dg3	Sec Dg4	
Explanation	Adjustment			

Services (\$ 21,000)

Service	Quantity	Price	Explanation	App. Quantity	App. Price	Justification	Status	R
M14 SUR In Growi	1	\$ 21000		1	\$ 21000		Approval Status Passed	0

Items (\$ 10)

Item	Quantity	Price	Explanation	App. Quantity	App. Price	Justification	Status	R
0182 PARACETAN	1	\$ 10		1	\$ 10		Approval Status Passed	0



Batch (screen only)

openMIS 0.0.1 Insurees and Policies ▾ Claims ▾ Administration ▾ Tools ▾ Profile ▾ <

Launch Batch Run

Region × District × Year Month

Batch Runs (0)

Type Year Month

Region × District × Product × Health Facility Level

Year	Month	Product	Care Type	Calculated Date	Index
------	-------	---------	-----------	-----------------	-------

Rows Per Page 10 ▾ 0-0 of 0 < >

Accounts

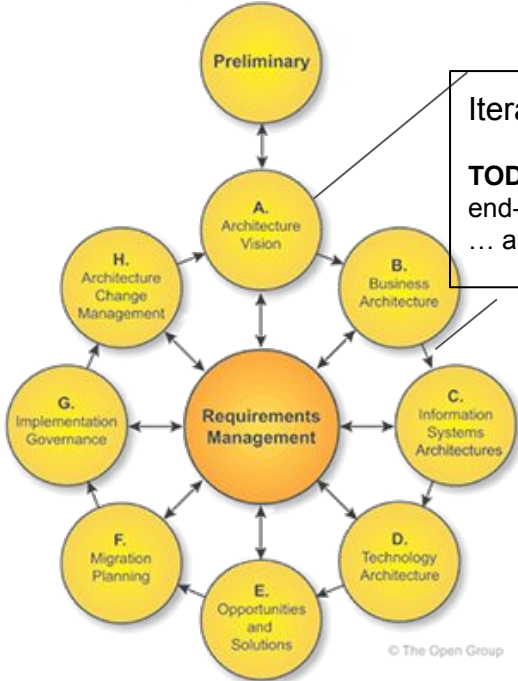
Group By Date From Date To

Region × District × Health Facility × Health Facility Level

Product × Batch Run



Iteration 4: ?? Module

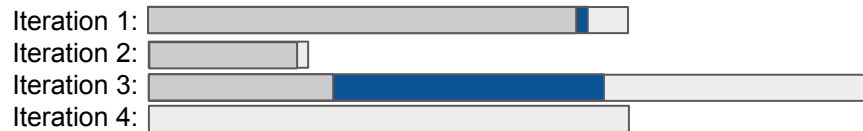


Iteration 4:
TODO: identify, scope & design the module to be implemented
end-september/october
... and start implementing!

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Roadmap (Bluesquare)



- Iteration 1 (04/2019): Building blocks for FHIR API

Dependencies:

- Identified data to be mapped (cfr. xls of Soldevelo) & stored proc to be called
- ✓ Module boundaries (started with the one documented in wiki and shown @Bonn)
- ✓ follow up, bug fix and adaptations

- Iteration 2 (05/2019): “All proxy” openMIS

CLOSED

- Iteration 3 (09/2019): Claim module

Dependencies:

- Finalize implementation (batches, reports,...)
- Run Acceptance Test (from input)

- Iteration 4 (11/2019): 2nd module

- Dependencies

- Identify “the” module, scope & design it ... by mid september!

