



Helping pregnant women and newborn
babies in developing countries



Our Mission

Global Strategy by 2030

Maternal mortality

70 or fewer deaths per
100,000 live births

SDG3.1

Newborn mortality

12 or fewer deaths per
1,000 live births

SDG3.2

Under-five mortality

25 or fewer deaths per
1,000 live births

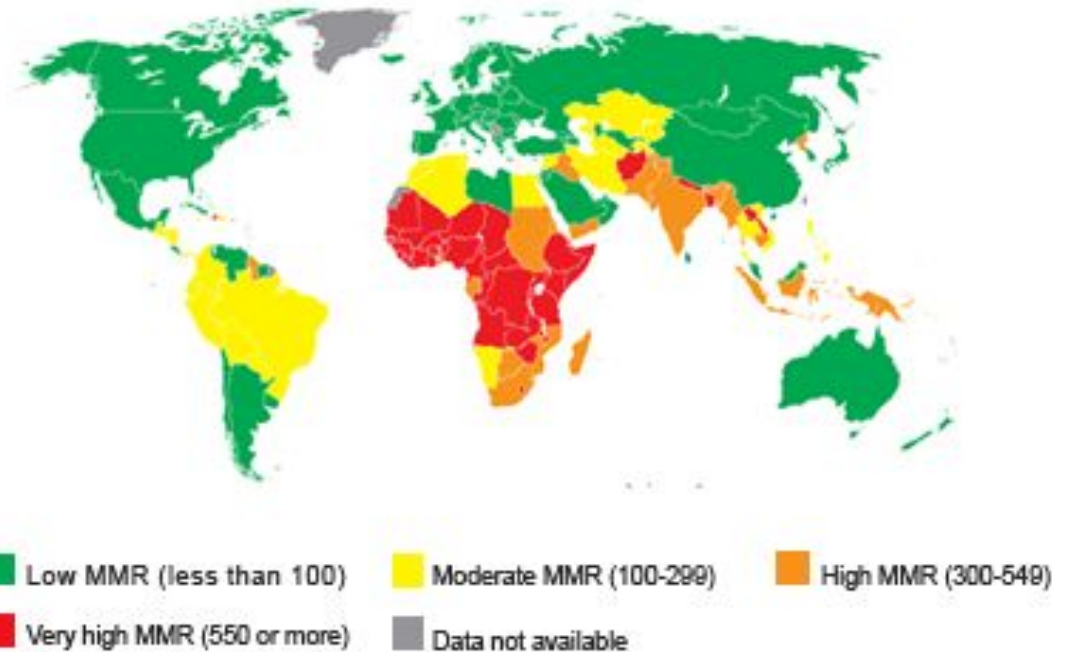
SDG3.2

High Impact Geographical

“Sub-Saharan Africa has the highest maternal mortality rate at 920 maternal deaths per 100,000 live births”



Source: https://www.unicef.org/factoftheweek/index_50177.html



A pregnant woman is shown from the waist up, wearing a white tube top and a patterned wrap. She is holding her belly with both hands. The background is a blurred outdoor setting.

High Impact

Biological

The major complications that account for nearly 75% of all maternal deaths:

- severe bleeding (mostly bleeding after childbirth)
- infections (usually after childbirth)
- high blood pressure during pregnancy (pre-eclampsia and eclampsia)
- complications from delivery
- unsafe abortion



Challenges

and Current Constraints

Current Constraints



Lack of data for PMNCH partners to take action collectively on a large scale



Doctors overloaded with patients and not enough time for documentation of quality data



Women in developing can be lacking in knowledge and education



Prevalent poverty meaning lack of advanced technology and living far away from local doctors



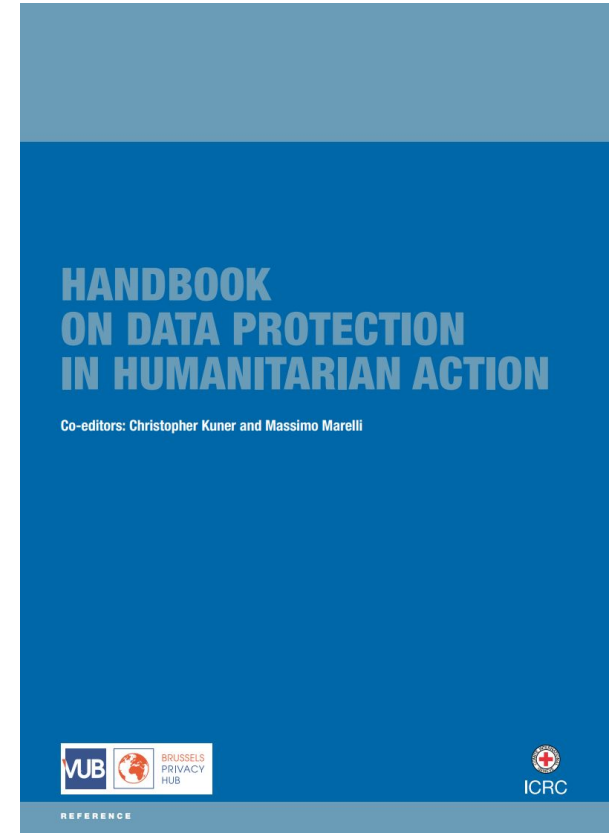
PMNCH has a large number partners (1000+) and challenged in connecting them on a global scale in one platform

Other Constraints

Data Privacy and Protection

- data access and collection, analysis or other use should be in compliance with applicable laws (data privacy and data protection laws);
- highest standards of confidentiality and moral and ethical conduct;
- Higher-level Security for Sensitive Data.

Sensitive data - data relating to health, race or ethnicity, religious/political/armed group affiliation, or genetic and biometric data.



Mobile Phone Penetration

“Mobile adoption reached 44% in 2017. By 2025 the SIM connection will be used by 84% of population in sub-Saharan Africa countries”

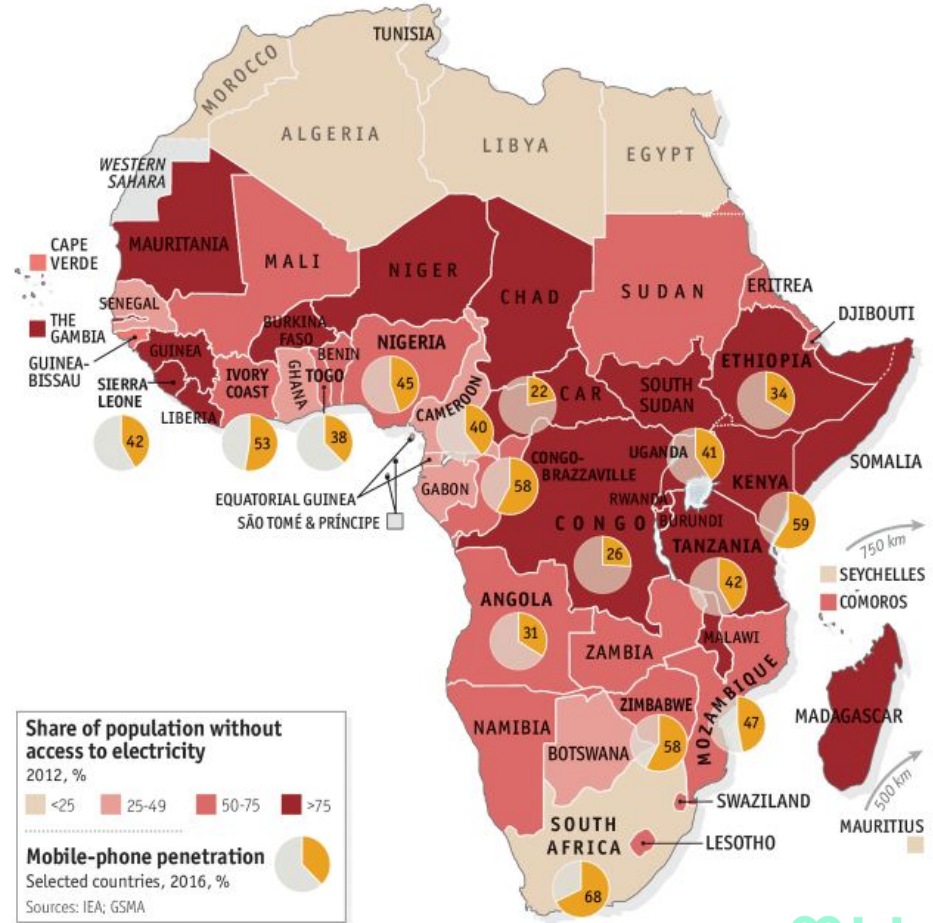
GSMA

“By 2025 690m people in a region will have smartphones”

GSMA

“In much of sub-Saharan Africa, mobile phones are more common than access to electricity”

The Economist







Our Solutions

Practical, Feasible and Scalable

How we help

Thinking about our stakeholders



Helping through the
whole journey of
pregnancy
and after for women
(and potentially men) in
developing countries

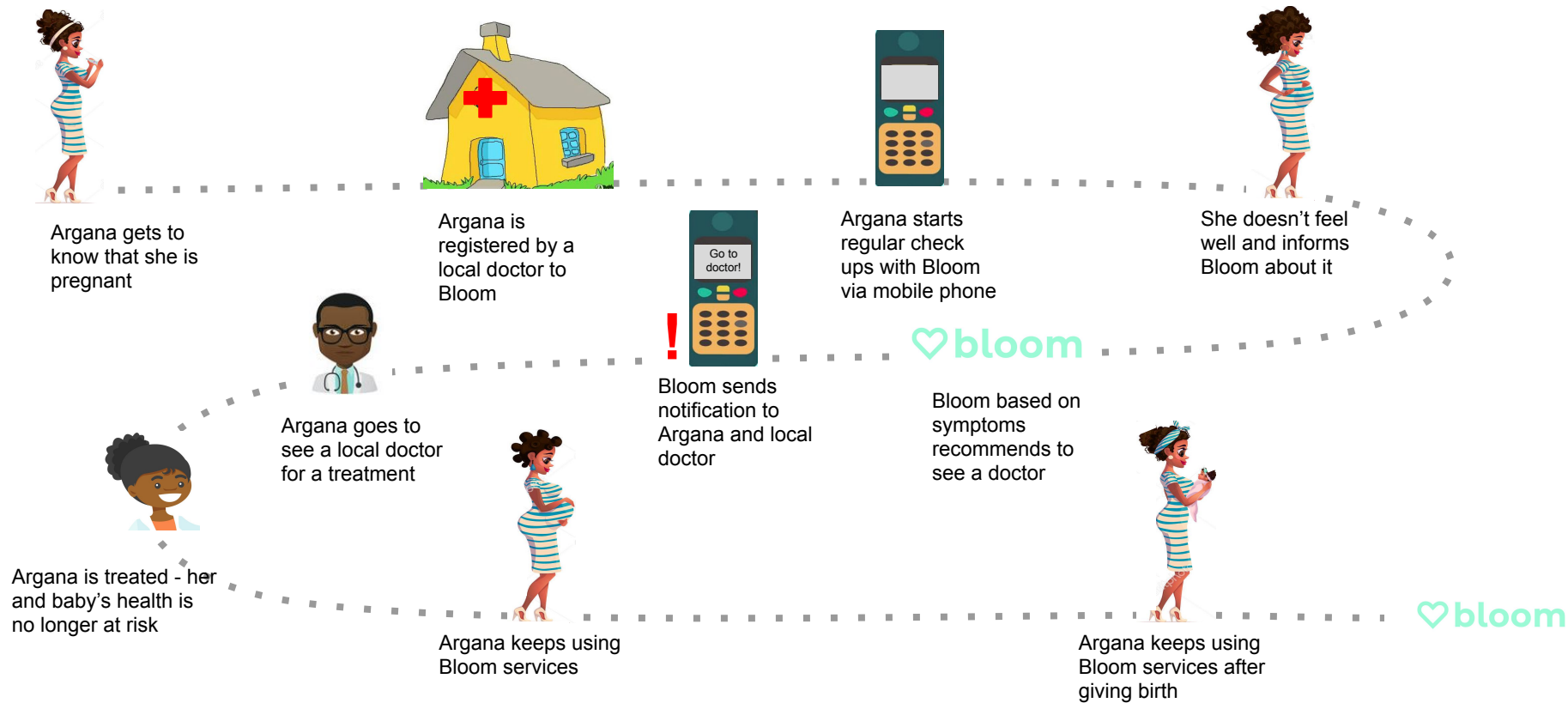


Helps doctors to
manage their workload
better with
detailed updates on
their patient's
well-being



Helps NGOs with
diverse and granular
data that could be
used for Machine
Learning / Analytics

Argana's Journey



Demo: Example of using Bloom

Frontend Website



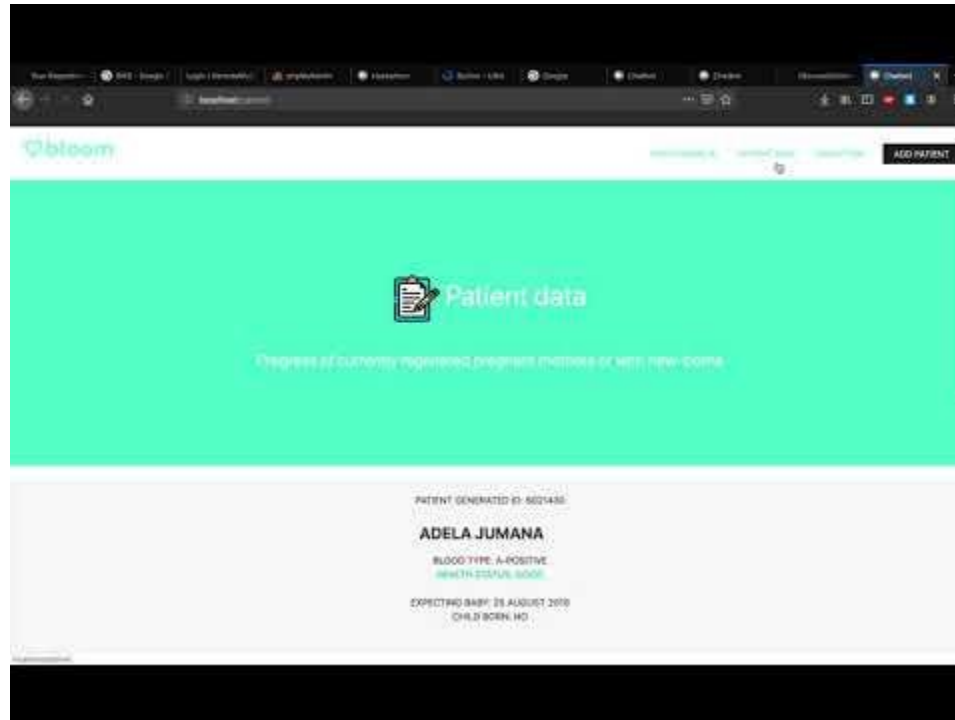
Sample

Web chatbot | Analytics

www.konple.com

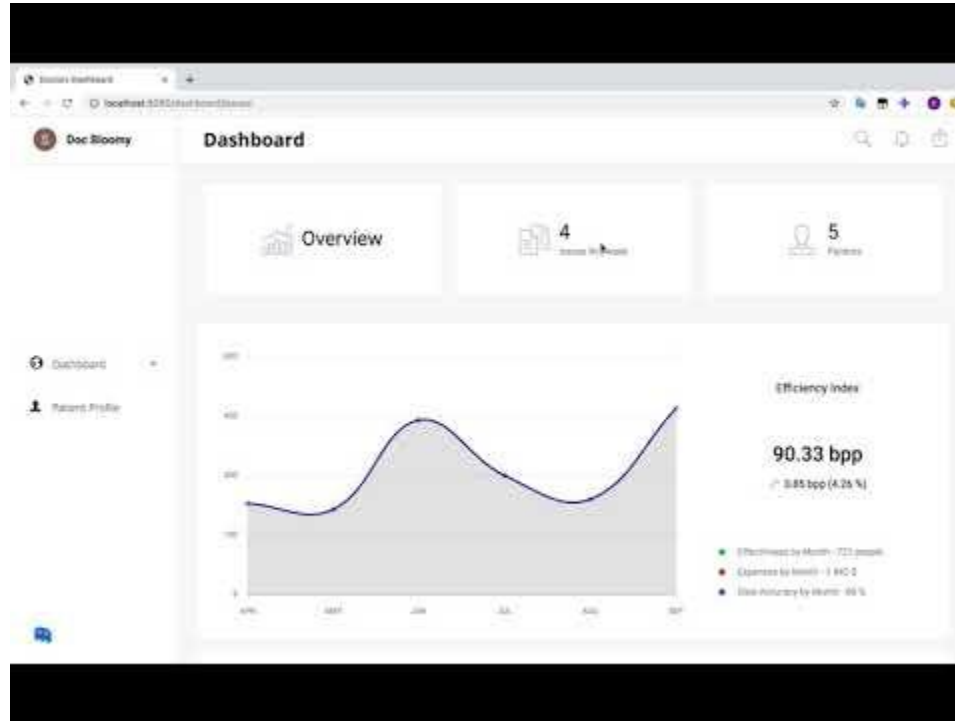
Demo: Bloom MVP Website

Frontend UI - Example Usage



Demo: Example of using Bloom

Frontend UI - Doctor Analysis Dashboard



Demo: Example of using Bloom

AI Bot Specification

```
def startCommand(bot, update):
    bot.send_message(chat_id=update.message.chat_id, text='Hi,how are you feeling today?')

def textMessage(bot, update):
    request = apiai.ApiAI('575b5c419c474665999e4d019cd65b5a').text_request() # Токен API к Dialogflow
    request.lang = 'en' # На каком языке будет послан запрос
    request.session_id = 'TestSession' # ID Сессии диалога (нужно, чтобы потом учить бота)
    request.query = update.message.text # Посылаем запрос к ИИ с сообщением от юзера
    print(request.query)
    responseJson = json.loads(request.getResponse().read().decode('utf-8'))
    print(responseJson)
    response = responseJson['result']['fulfillment']['speech'] # Разбираем JSON и вытаскиваем ответ
    # Если есть ответ от бота - присылаем юзеру, если нет - бот его не понял
    if response:
        bot.send_message(chat_id=update.message.chat_id, text=response)
    else:
        bot.send_message(chat_id=update.message.chat_id, text='Sorry, I cannot understand you !')

# Хендлеры

start_command_handler = CommandHandler('start', startCommand)
text_message_handler = MessageHandler(Filters.text, textMessage)

# Добавляем хендлеры в диспетчер

dispatcher.add_handler(start_command_handler)
dispatcher.add_handler(text_message_handler)
```

Demo: Bloom MVP

Backend OpenAPI Specification (Not a SwaggerUI yet)

```
# Описываем ресурс `/users`
'users': {
    # Здесь мы описываем модель данных. Для валидации используется модуль Cerberus от автора Eve.
    # Вы можете ознакомиться с ним в официальной документации модуля http://docs.python-cerberus.org/en/stable/.
    # Либо прочитать заметки в официальной документации EVE http://python-eve.org/validation.html#validation.
    'schema': {
        'username': {
            'type': 'string',
            'minlength': 5,
            'maxlength': 32,
            'required': True,
            # уникальное поле (индекс не создаётся, просто значение должно быть уникальным)
            'unique': True,
        },
        'firstname': {
            'type': 'string',
            'minlength': 1,
            'maxlength': 10,
            'required': True,
        },
        'lastname': {
            'type': 'string',
            'minlength': 1,
            'maxlength': 15,
            'required': True,
        },
        'dob': {
            'type': 'datetime',
        },
        'role': {
            'type': 'list', # тип: список
            'allowed': ["patient", "doctor", "admin"], # разрешаем использовать значения: "patient", "doctor", "admin"
        },
        'location': {
            'type': 'dict', # тип: словарь
            # описываем "схему" словаря
            'schema': {
```

Demo: Bloom MVP

Telegram AI Assistant Chat Bot

You can try our Telegram chat bot using
this QR-code



Demo: Bloom MVP

Phone Call AI Assistant Bot

You can call and have a screening by our
bot using this phone number:

+1 360-227-1097

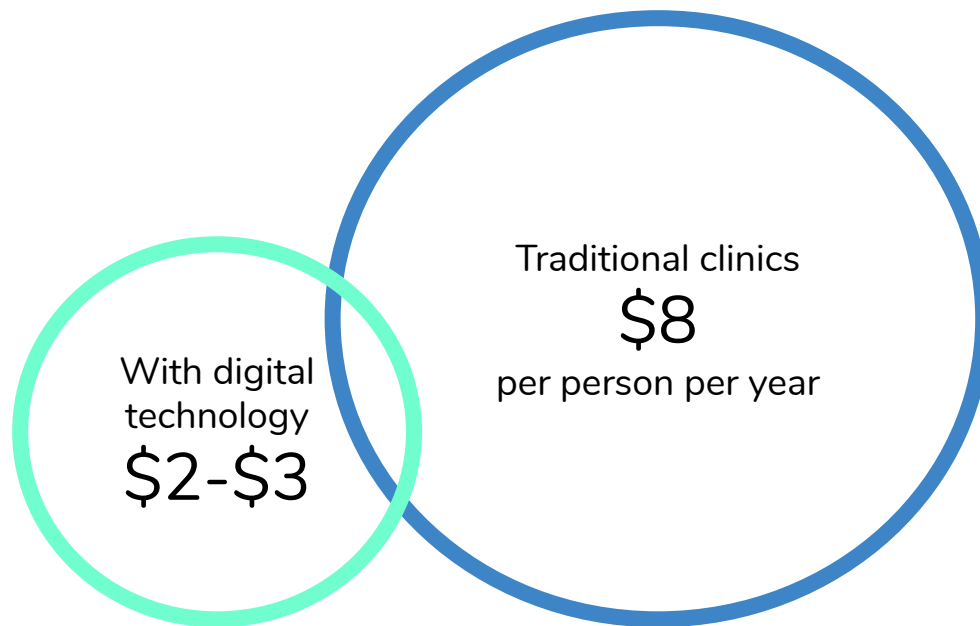


Technology

Architecture and Feasibility

Economics

Cost Reductions








McKinsey
& Company

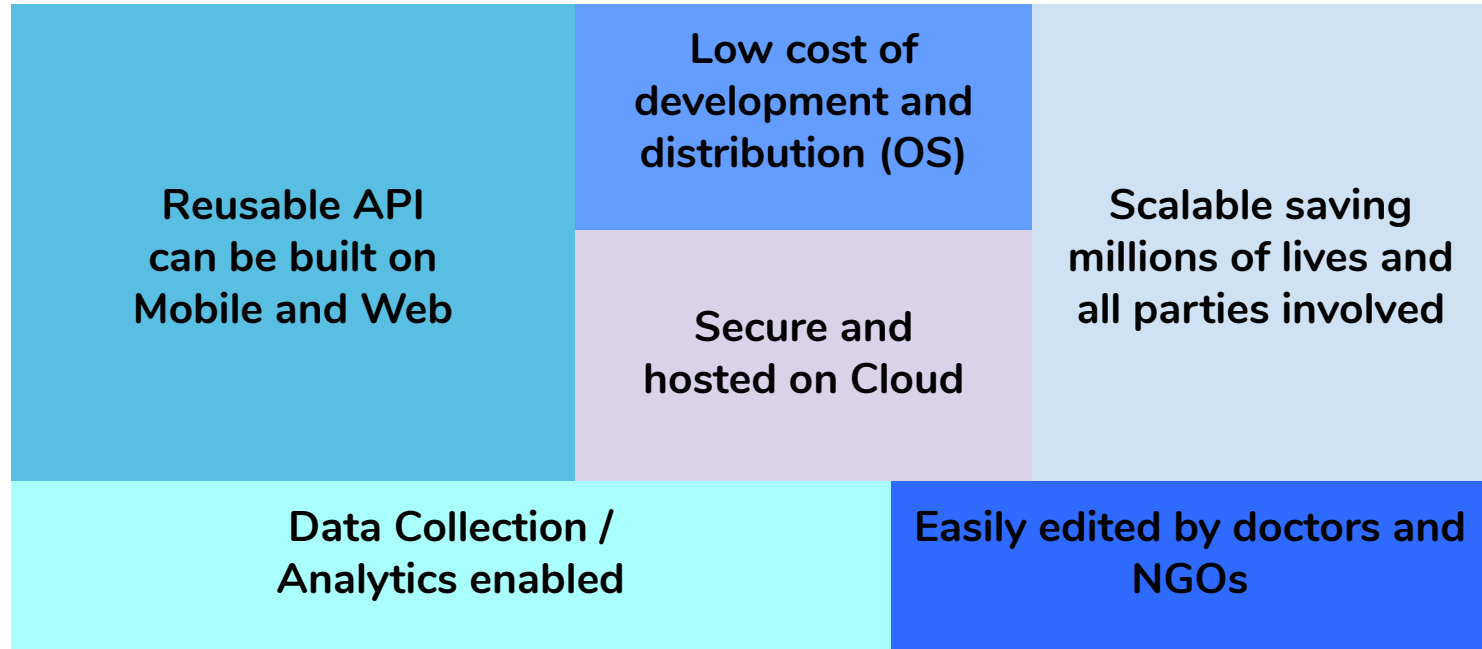


*Source: <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/three-practical-steps-to-better-health-for-africans>

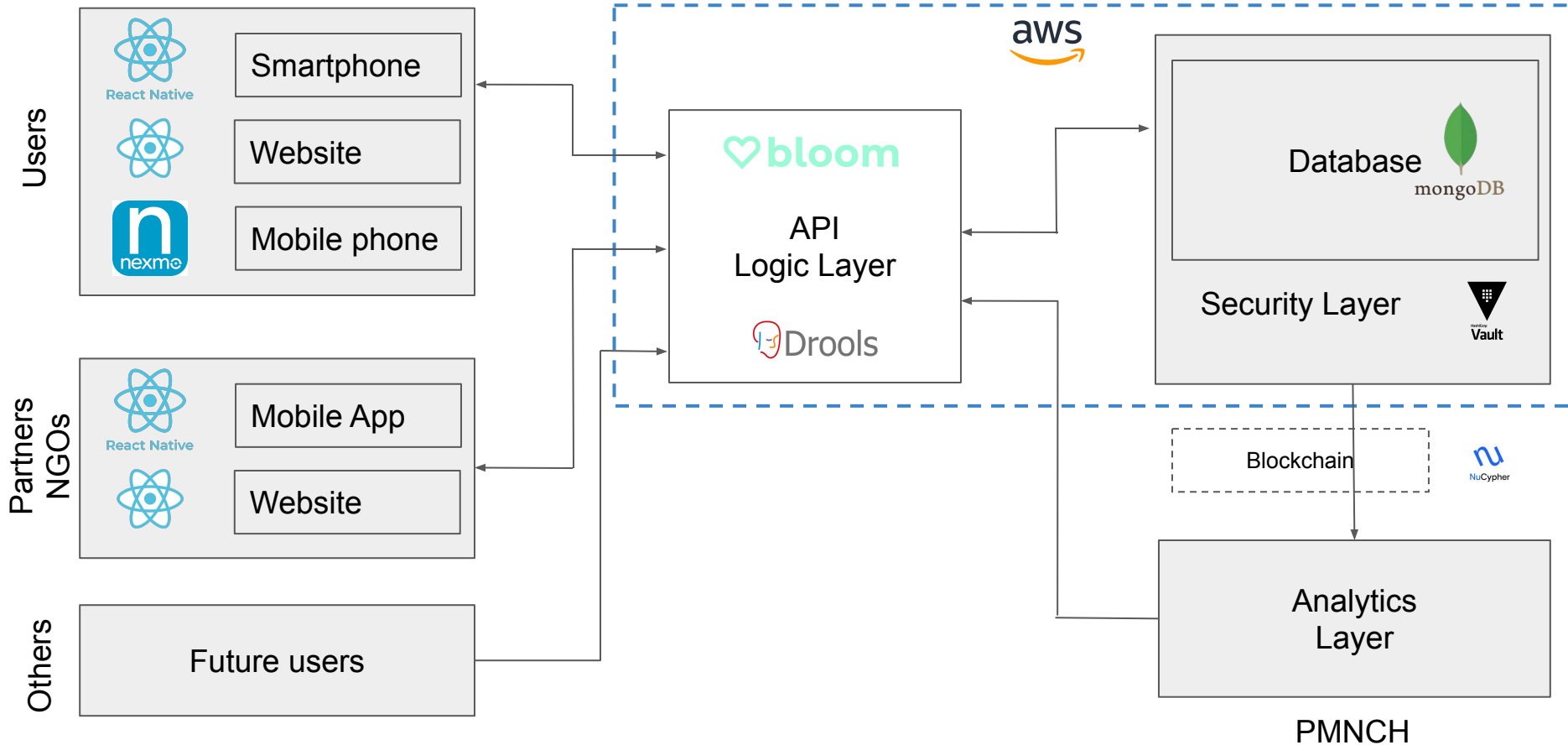
Potential Risks Considered

-  Cost - Development, Distribution, Maintenance
-  Local bureaucracy and legislation (AI and Blockchain)
-  Security / Privacy | Data Protection
-  Compatibility with existing framework
-  Should be scalable (API gateway and Load Balancer)

Technology



Architecture [Domain Driven Design DDD]



Adoption/Distribution

I heard about
Bloom through
my friend...

My doctor
helped me set
up on Bloom...

I saw Bloom on
a poster in a
local shop

