

IT for Translational Medicine (ITTM)



Dr Erfan Younesi, Senior Scientist

On behalf of Dr Andreas Kremer, Managing Director

- Quality data in the right context
- Optimizing data life cycle and processes



**Incorporation date
in Luxembourg**

■ 2015



**Number of employees
in Luxembourg**

■ 8



ITTM

Information Technology
for Translational Medicine

Data management services for Digital Health

Secure and Quality (bio)medical data for citizens, life sciences, pharma and health
SHAPING THE FUTURE TOGETHER Health Technologies @Luxemburg

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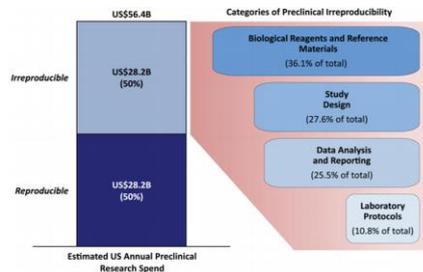
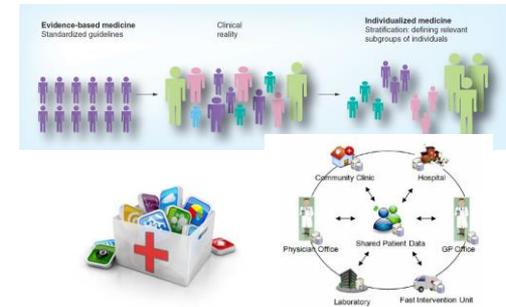


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Translational Medicine and Digital Health Trends, Needs and Opportunities

- Paradigm shift towards
 - personalized and evidence-base medicine
 - therapy support, **prediction** and **prevention**
- Challenges
 - connection of medical / clinical care and **self-reported** outcome/measurements
 - **fast development vs regulation** (e.g. , cross border, consumer-grade vs medical-grade apps, **evaluation while dissemination**)



Freedman et al 2015 (*Global Biological Standards Institute*)

- Existing bottlenecks are
 - **data quality**, data storage, **integration** and interpretation, **sharing** and **interoperability**
 - Leading to loss of data or **potential misinterpretation**
- Existing concerns are
 - **privacy** and **security** (not only GDPR)

The European Commission's Perspective

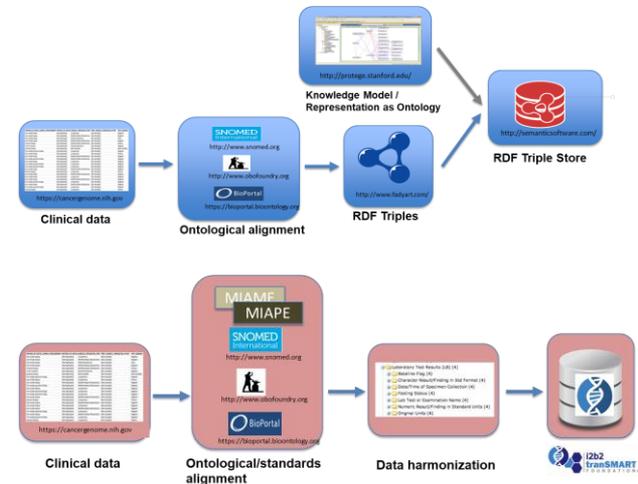
- Citizen's secure access to their health data, also across borders
- Personalised medicine through shared European data infrastructure
- Citizen empowerment with digital tools for user feedback and person-centred care



ITTM S.A. Value Proposition & Customers

Quality Data, System Integration & Process Optimization

- Pharma, Biotech, H2020 & IMI2
 - Cleansing of pre-clinical and clinical data, QC, validation, harmonization and standardization to ensure **quality data**
 - **Ontology design** & implementation (OWL, Protégé, ...), semantic triple store (SPARQL, Stardog)
 - Development of a semantic web technology-based framework for clinical research data
 - Data curation and harmonization of publicly available multi-omics clinical to support the identification of novel biomarkers



- Data Management Plan and FAIR data



- Visual Data Analytics

- Together with LCSB
 - SmartR, *Herzinger et al. 2017*
 - Fractalis, *Herzinger et al. 2018*



Disease Map

Build on proven technology of LCSB (PD map)

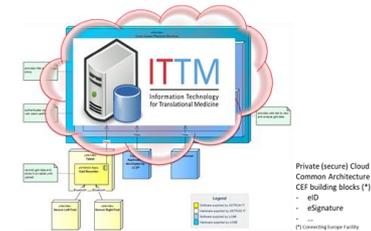


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GLIOTRAIN

- Ontology engineering and semantic data annotation / integration
- Mining and curation of biomedical literature and mechanistic modeling with OpenBEL and SBML.
- expert-curated comprehensive and interactive disease map development, for hypothesis generation, contextualization interpretation and validation
- mechanisms and pathways of genes/proteins that are involved in or related to the development and progression of disease
- graphical representation

ITTM S.A. Key Competence Services and Projects

- Two interwoven **services**:
 - **Data curation, harmonization, ontology design & implementation**
 - **Secure data hosting and platform setup, secure archiving with a focus on mHealth applications and solutions**



- **B2B and strategic partnerships with established commercial organizations**



- **(Selected) Customers and Projects.**

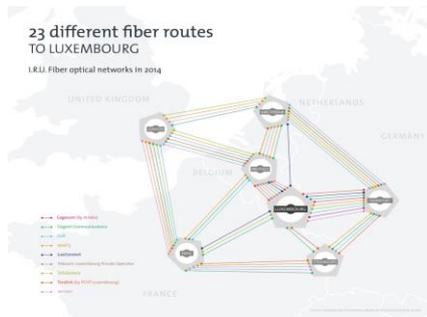


NEW: IMI2 TransBioLine & IMI2 BioMAP

Interoperability, Security, and Privacy

Some thoughts for discussion

Luxembourg has a well developed IT infrastructure ensuring optimal health-care support in Europe.



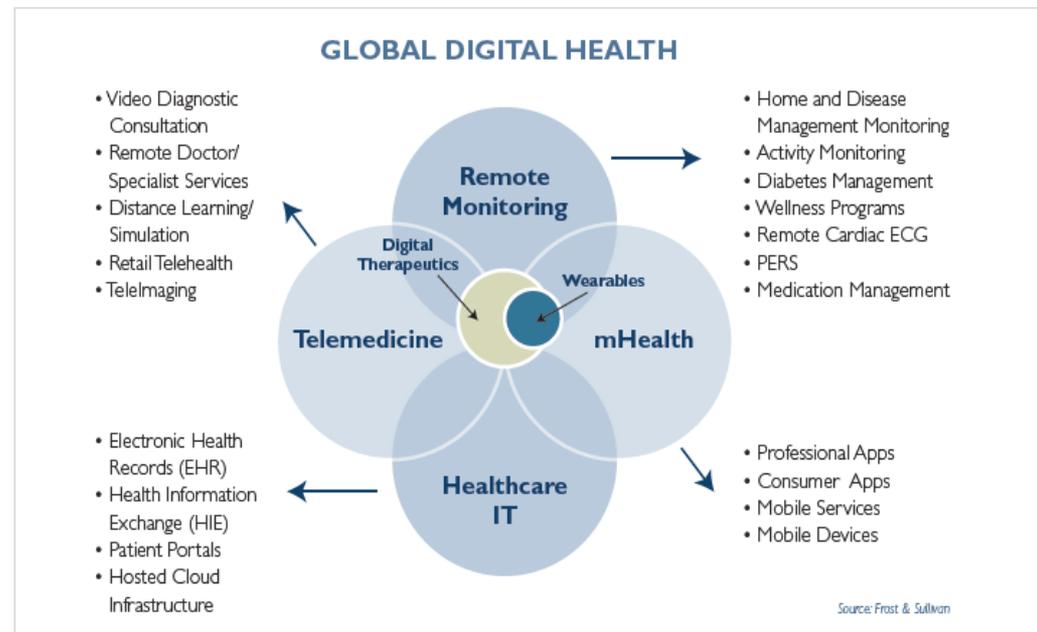
ITTM Services in Digital Health

Needs assessment, installation/set-up, management of local and cloud platforms

Secure data hosting and platform setup (telemedicine), secure archiving.



(H2020, achieving interoperability between the data, components and the applications within each of the use cases).



Thank YOU !



mHealth
Data Curation
Disease Maps



It's a Team Effort...
We Are Passionate About Your Data