

PARIS

DEC, 13th 2017

- Workshop 2: How digital therapeutics solutions & connected care make life easier

Workshop 2: How digital therapeutics solutions & connected care make life easier? (Room List)



Moderator:
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Head of Geriatrics
Department CHU of
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Ambassador of the
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(PH)
[@PHinFrance](#)



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CEO, Hasso-Plattner
Institute (G)
[@HPI_DE](#)



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[@ ACETIAM](#)

Organised by



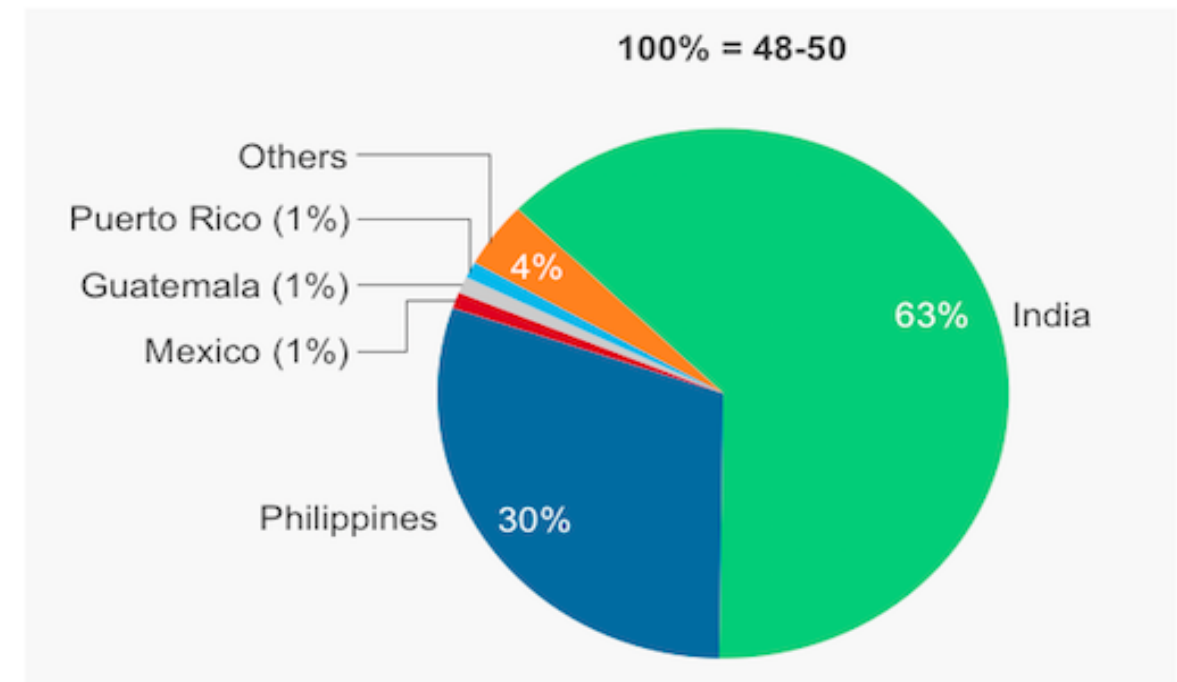
Healthcare Information Management (HIM) Industry of the Philippines

PARIS
DEC, 13th 2017

H.E. Ma. Theresa Lazaro
Philippine Ambassador to France

PH: leading healthcare information management service delivery location

Share of offshore healthcare BPO payer market¹
FTEs ('000s)



Healthcare Information Management (HIM) Industry of the Philippines



Philippines is the preferred offshore location for clinical healthcare business process services

<div>Highly favorable</div> <div>Favorable, some concerns</div> <div>Least favorable</div>				
Country	Number of USRN ^{1,2} graduates (2011-15)	English proficiency	Indexed operating costs ³	Overall rating
			India = 100	
Philippines	<div></div> 5,812	<div></div>	<div>125</div>	<div></div>
Canada	<div></div> 1,874	<div></div>	<div>500</div>	<div></div>
South Korea	<div></div> 1,086	<div></div>	<div>350</div>	<div></div>
India	<div></div> 923	<div></div>	<div>100</div>	<div></div>
Puerto Rico	<div></div> 594	<div></div>	<div>350</div>	<div></div>
Jamaica	<div></div> 260	<div></div>	<div>150</div>	<div></div>
Nepal	<div></div> 234	<div></div>	<div>85</div>	<div></div>
Nigeria	<div></div> 214	<div></div>	<div>250</div>	<div></div>
China	<div></div> 208	<div></div>	<div>275</div>	<div></div>

¹ Includes relevant entry-level talent suitable for clinical healthcare BPO (NCLEX-RN certification)

² NCLEX-RN: National Council Licensure Examination for Registered Nurses; USRN - U.S. Registered Nurse

³ Reflects market average annual costs for steady state of operations including salary and benefits, facility cost, technology and other expenses. Excludes corporate overheads, senior management / expat salaries, transition costs, and capital expenses related to set-up

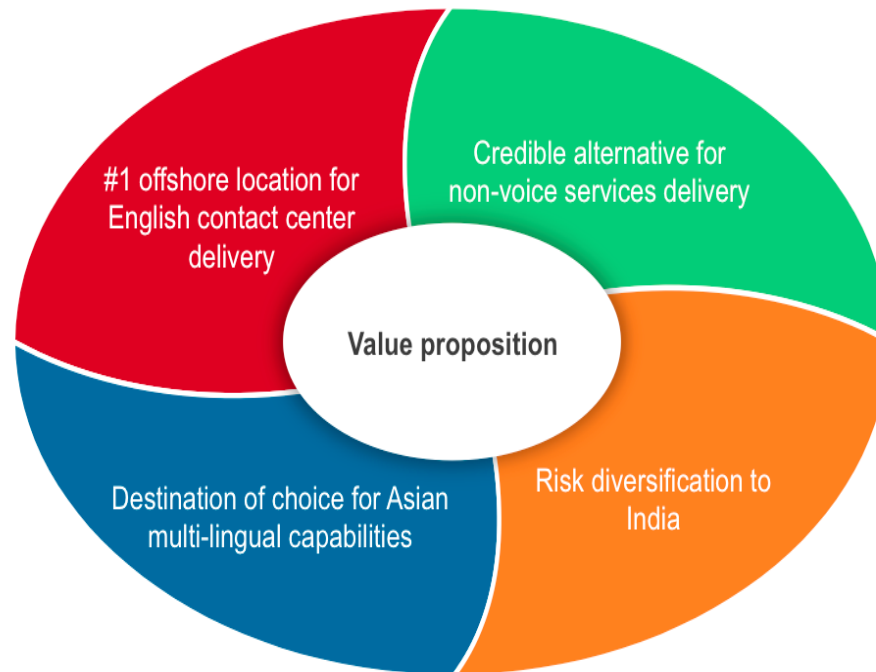
Source: NCSBN, Everest Group (2017)



Healthcare Information Management (HIM) Industry of the Philippines



Value proposition of the Philippines in global location portfolio of enterprises/service providers



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7



Healthcare Information Management (HIM) Industry of the Philippines



Brief history of HIM in PH

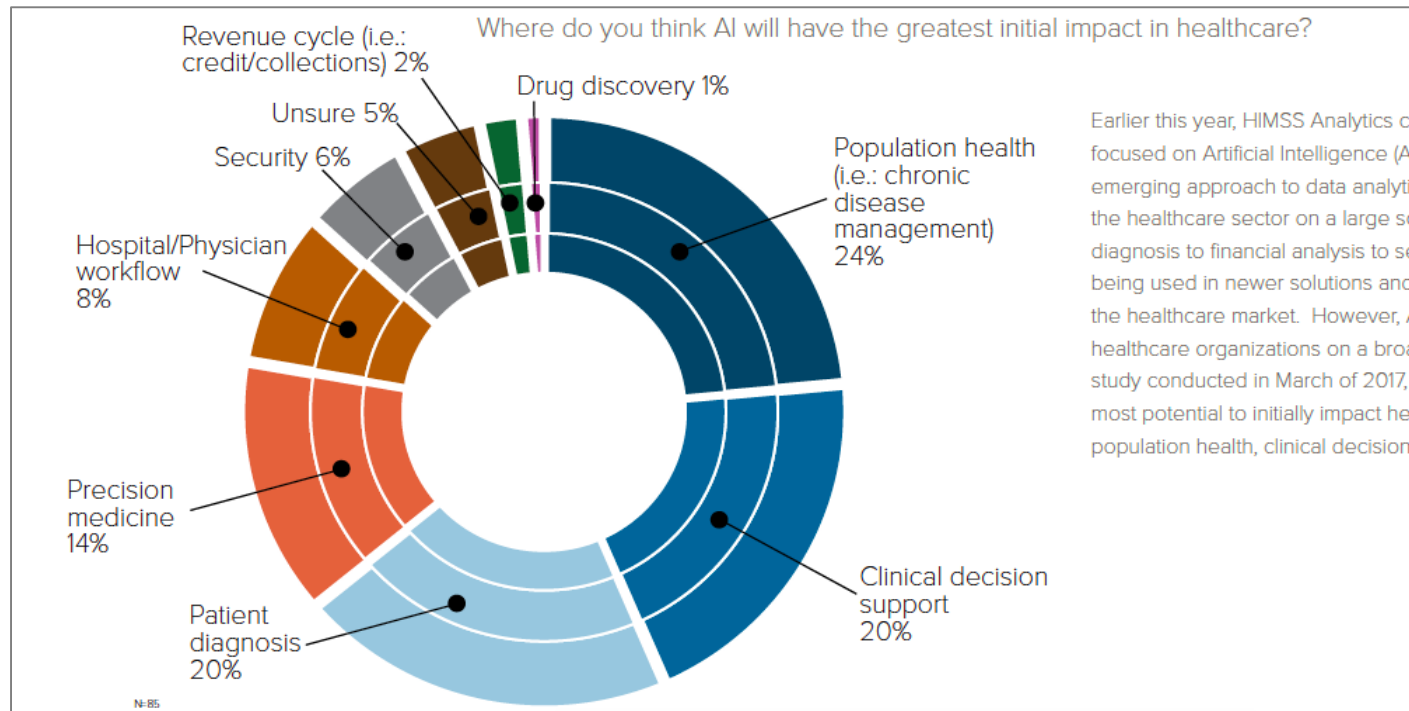
	Case Management			Medical Transcription
Healthcare Documentation	Patient Appointment	EMR/EHR Application Development	Healthcare Business Intelligence for Providers, Payors, Pharmaceuticals	Medical Coding
Claims Processing	Nursing Triage	Mobile Healthcare		Medical Billing
Back Office Component of RCM	Telemedicine	Data Security	Data Analytics for Predictive Healthcare Management	Medical Terminology
Supply Chain Management	Providers Virtual Assistance	Gamification		Service Management
NON-VOICE	VOICE	IT	ANALYTICS	TRAINING



Healthcare Information Management (HIM) Industry of the Philippines



Early impact potential of AI

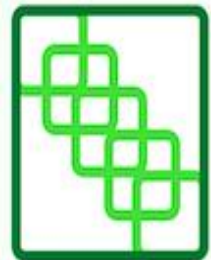


Case 1: Blockchain on EMR



healthportal

HealthPortal is our next generation cloud-based Electronic Medical Record (EMR) system which facilitates smarter data management and exchange within and between clinics and private practices, thereby improving coordination, cost efficiency and patient safety.



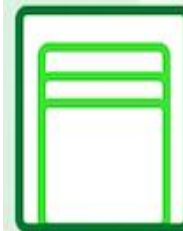
healthnetwork

HealthNetwork is our pioneering Health Information Exchange (HIE). Unlike traditional HIEs, the HealthNetwork is blockchain-based, enabling a decentralized approach that is more cost-effective, faster and more secure than other solutions.



healthportal PRO

Built for mid to large healthcare providers such as hospitals and hospital chains, HealthPortal Pro is an all-in-one hospital management system aimed at delivering all the HealthPortal's capabilities but with additional modules such as accounting, bed and room management, pharmacy management, and human resource management (HR), to name a few.



healthwallet

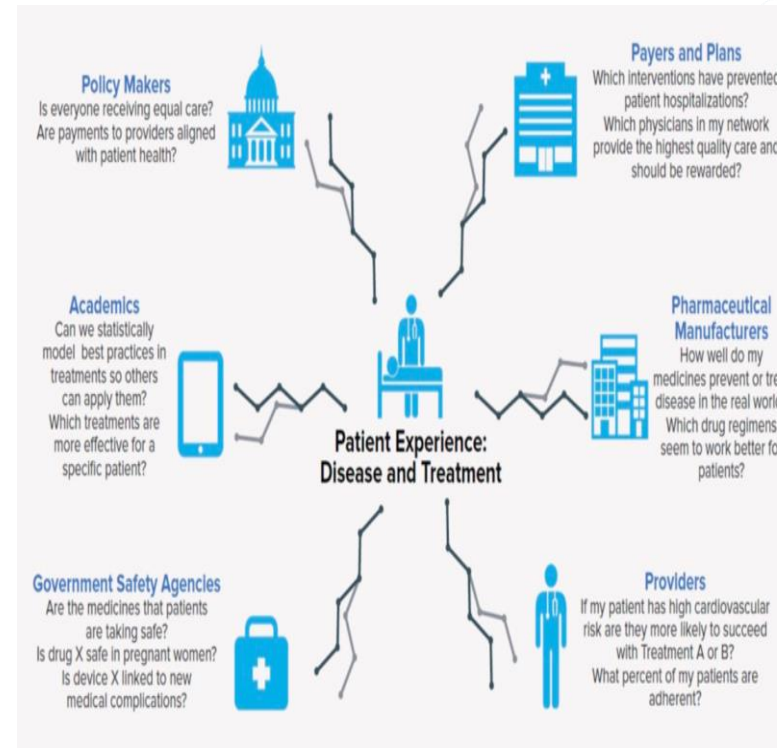
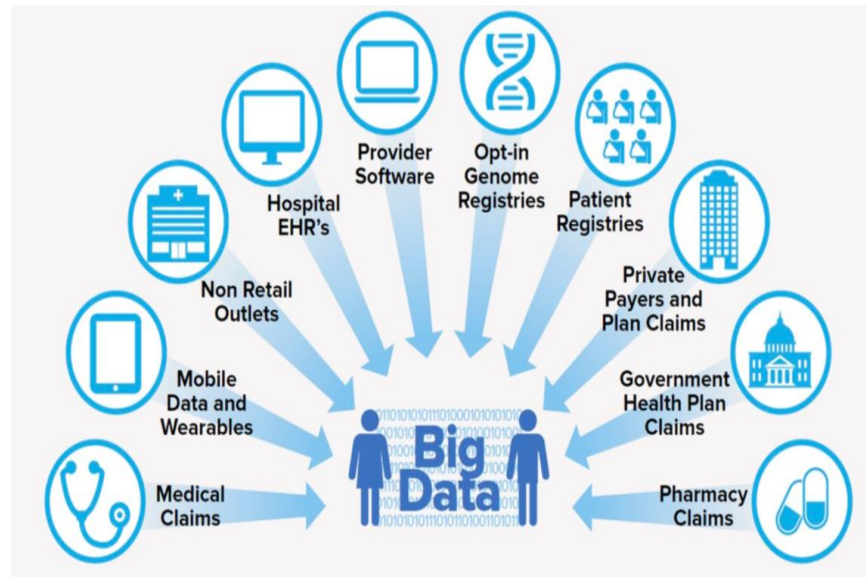
HealthWallet is a cross-platform mobile application specifically created to empower patients to manage and secure their personal health records. Patients can view and download their lab tests, imaging results and prescriptions; patients can grant and revoke access to their records in real-time; patients can search and locate nearby health facilities. All at their fingertips.



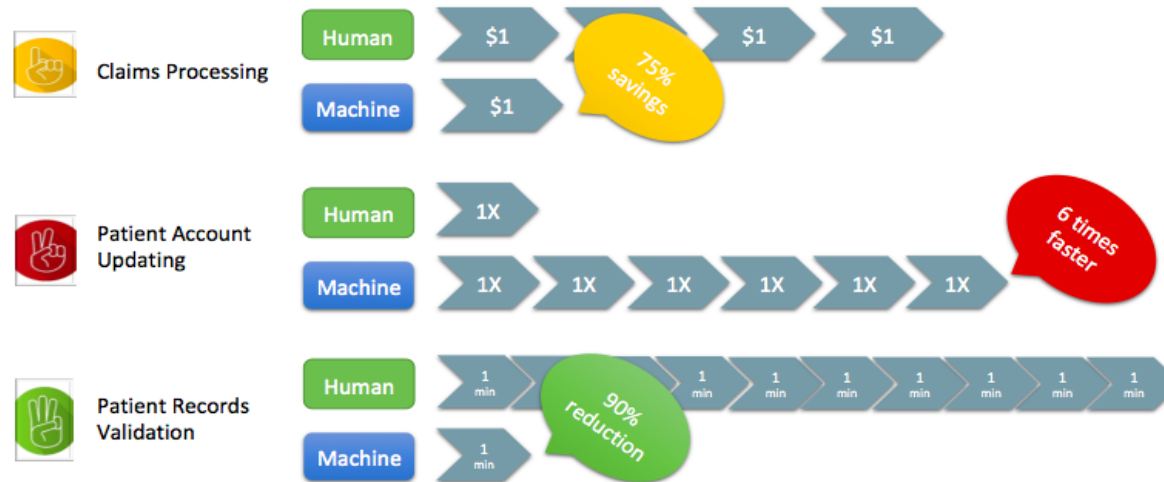
Healthcare Information Management (HIM) Industry of the Philippines



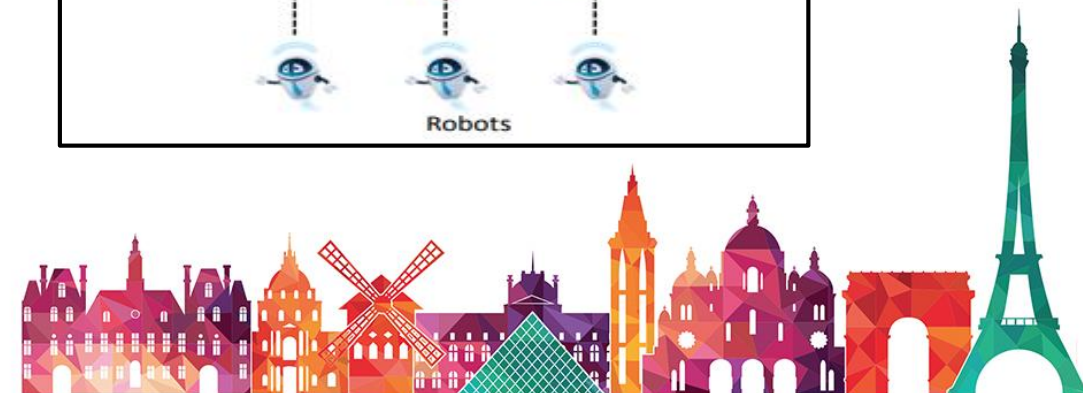
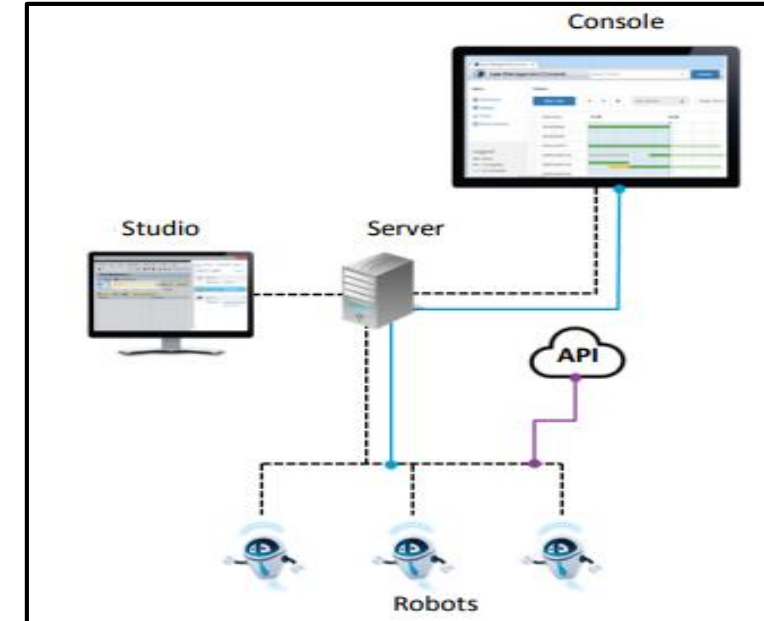
Case 2: Analytics and Big Data in healthcare



Case 3: Robotics Process Automation



Augmentation = Man + Machines



Healthcare Information Management (HIM) Industry of the Philippines



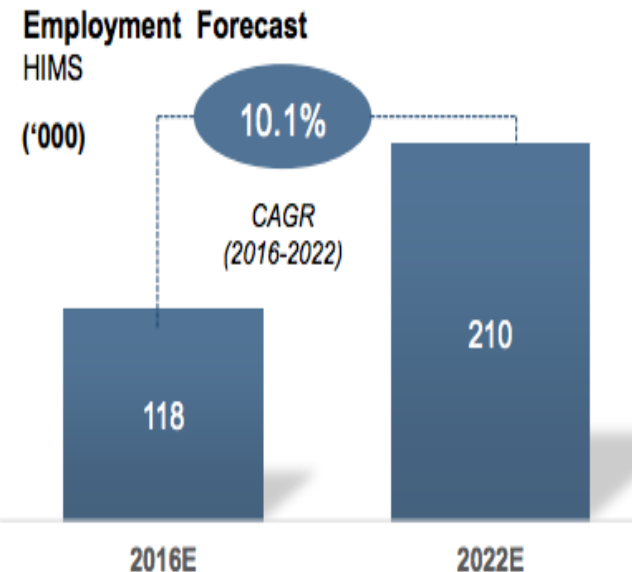
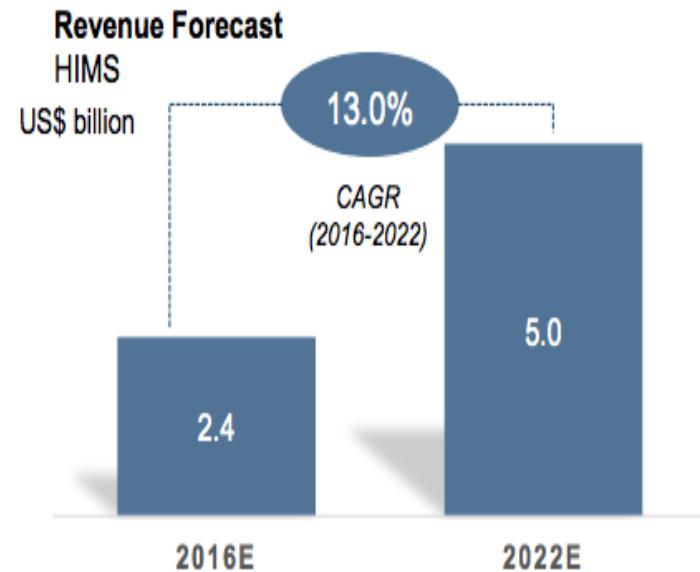
Industry challenges: Level up service portfolio and upscale talent base



Healthcare Information Management (HIM) Industry of the Philippines



Goal for the next 6 years



PARIS
DEC, 13th 2017

For questions and inquiries regarding the presentation, please send an email to paris.pe@dfa.gov.ph and paris@dti.gov.ph.



Connect Healthcare
Professionals and Patients
in Real Time

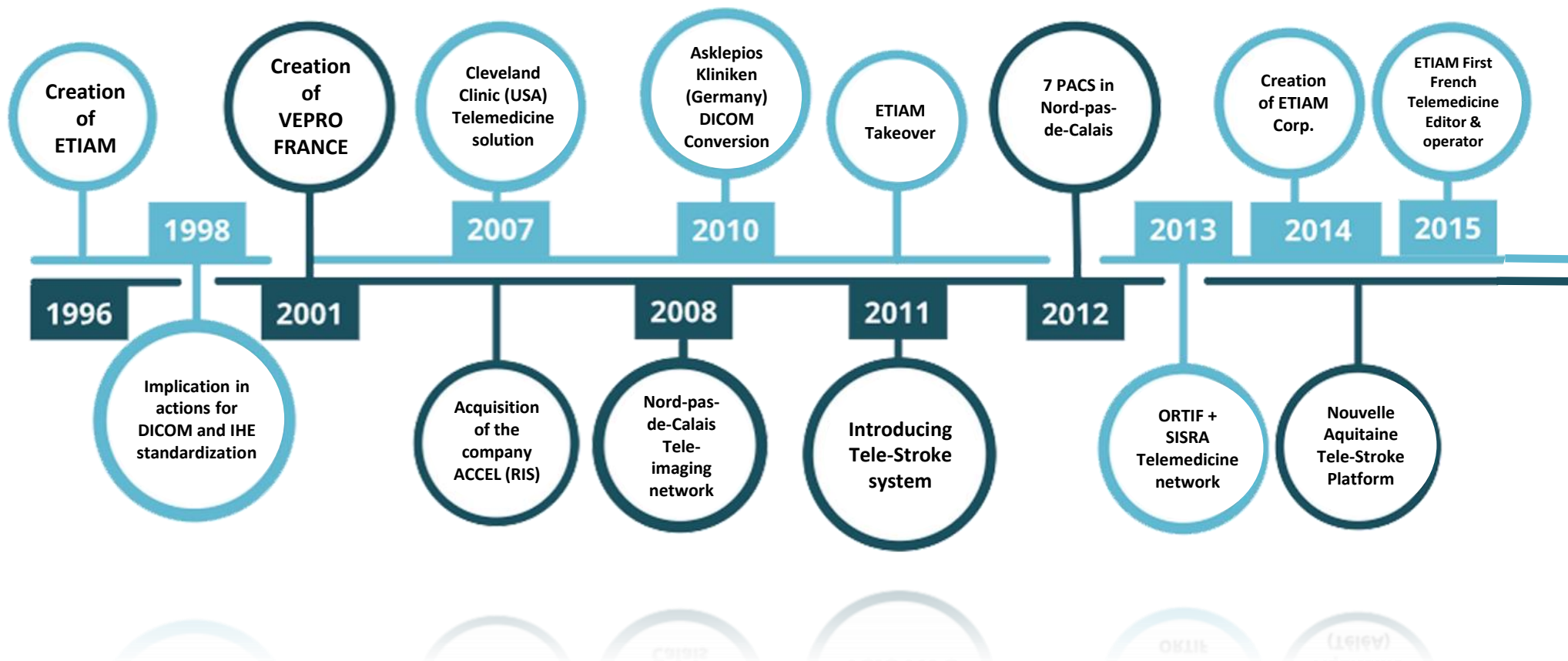


Company history



+

ACCELIS



2017 : MNH GROUP introduces ACETIAM



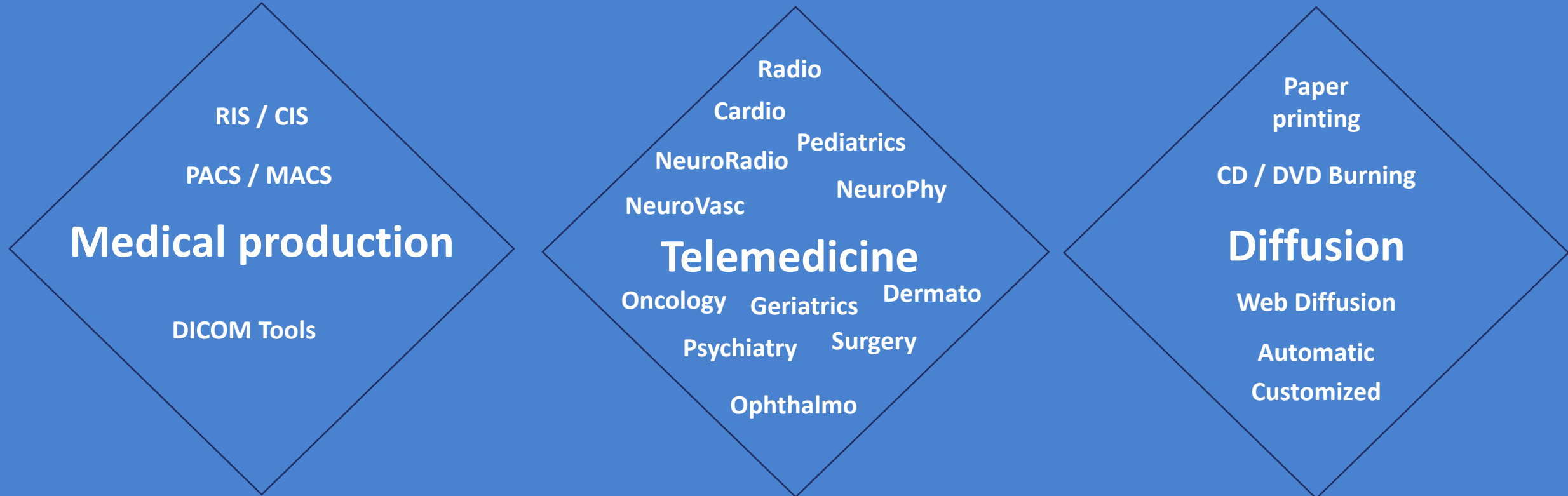
20 years experience in medical imaging solutions

More than 500 interconnected Healthcare Facilities with 4 000 multi-specialty physicians

+ 20 millions images exchanged each month

6 offices :

Paris, Bordeaux, Rennes
Nice, Lille, Boston (USA)



Cooperation

University Hospital

Community Hospital

Multi-specialty telemedicine solution



Secure patient cases exchange

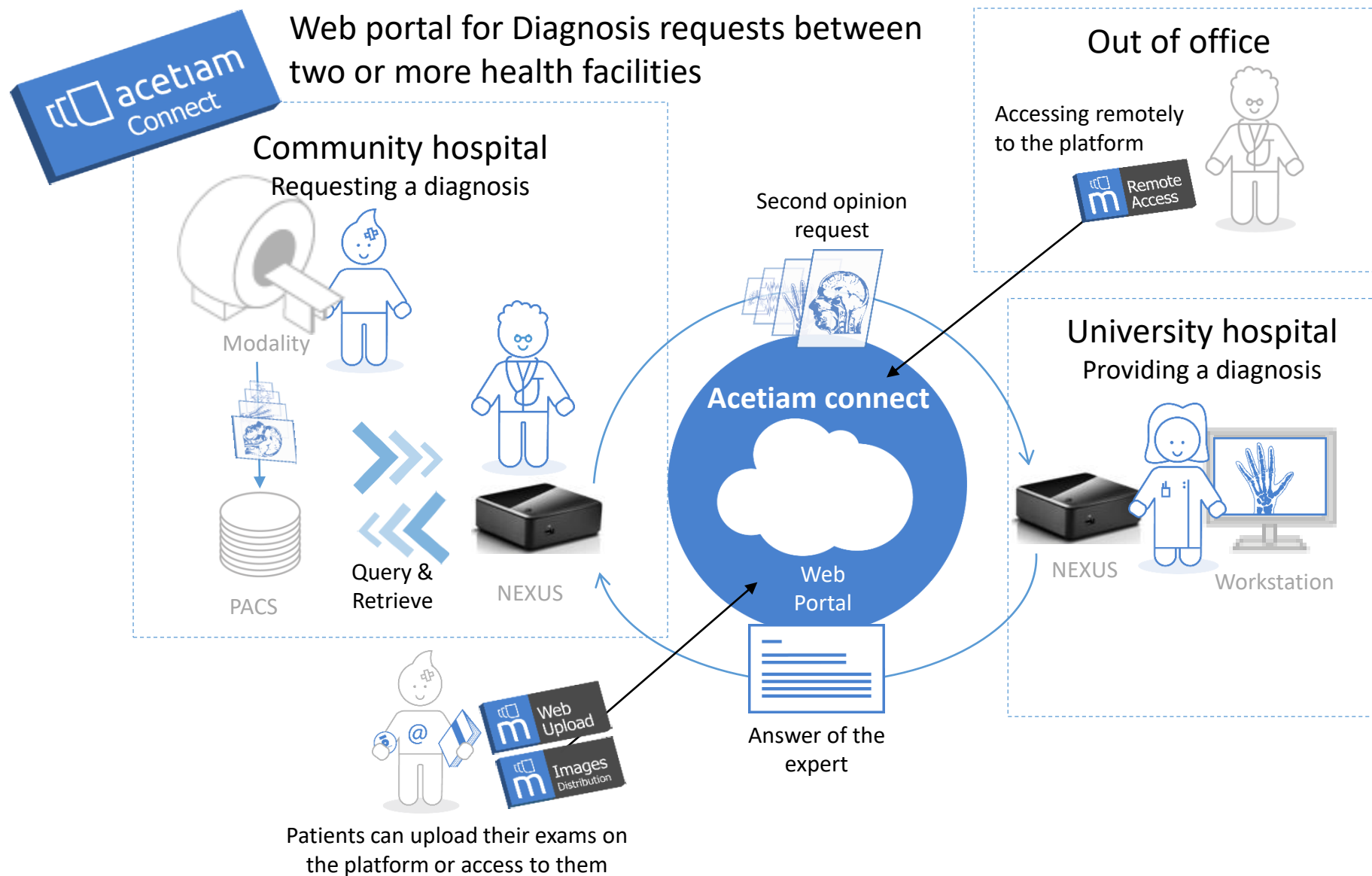
Gain productivity in patient care

Organize your care activity in an optimal way

Operate PACS to PACS exchanges
between chosen healthcare facilities

Operate High quality viedoconference
(WEB RTC, multi-correspondings, session recording)

Adapted viewers to your medical practice
(radiology, surgery, rheumatology...)



Our References



JOHNS HOPKINS
MEDICINE

UPMC
LIFE CHANGING
MEDICINE



Boston
Children's
Hospital

Until every child is well™



ASSISTANCE
PUBLIQUE



HÔPITAUX
DE PARIS



Service
de Santé
des Armées



Assistance Publique
Hôpitaux de Marseille

IMAGERIE
MÉDICALE DU PAYS DE GEX



Centre Hospitalier Régional
Universitaire de Lille

e-sis
59/62

telé
Médecine
en Aquitaine

ORTIF
TÉLÉEXPERTISE
TÉLÉCONSULTATION
TÉLÉRADIOLOGIE

PÔLE SANTÉ
RÉPUBLIQUE

CENTRE HOSPITALIER
DE VALENCIENNES



HELIOS Kliniken
Jeder Moment ist Medizin

ASKLEPIOS
Gemeinsam für Gesundheit



People caring for people



MyConsult - Patient Online Service for Second opinion

Example with Dermatology

MyConsult is a portal to help patients who need a medical advice from a healthcare professional.

- Adapted to several medical specialties (radiology, neurology, dermatology...)
- Site: One of the Major Health Providers in the US
- Requirements: manage Outside Imaging Studies
- Departments involved: Radiology, IT and all clinical departments
- Need: Hosted Service for web uploading media
- Volume: 400 to 800 outside studies per day



The screenshot shows the Cleveland Clinic MyConsult website. At the top, there's a navigation bar with links for Education, Clinical & Lab Research, Resources for Medical Professionals, and a 'GIVE ONLINE' button. A search bar is also present. Below the navigation bar, the Cleveland Clinic logo is displayed. A banner for 'HealthHub from Cleveland Clinic' features a photo of Daniel Clair, MD, and an 'Explore Now' button. The main content area is titled 'MyConsult Online Medical Second Opinion' and describes the service. A sidebar on the left lists 'Online Services' including MyChart, MyConsult Online Medical Second Opinion, DrConnect, MyPractice Community, MyImages, and Contact Online Services. Social media sharing options are visible below the main text, and a 'Learn More About MyConsult' button is at the bottom.

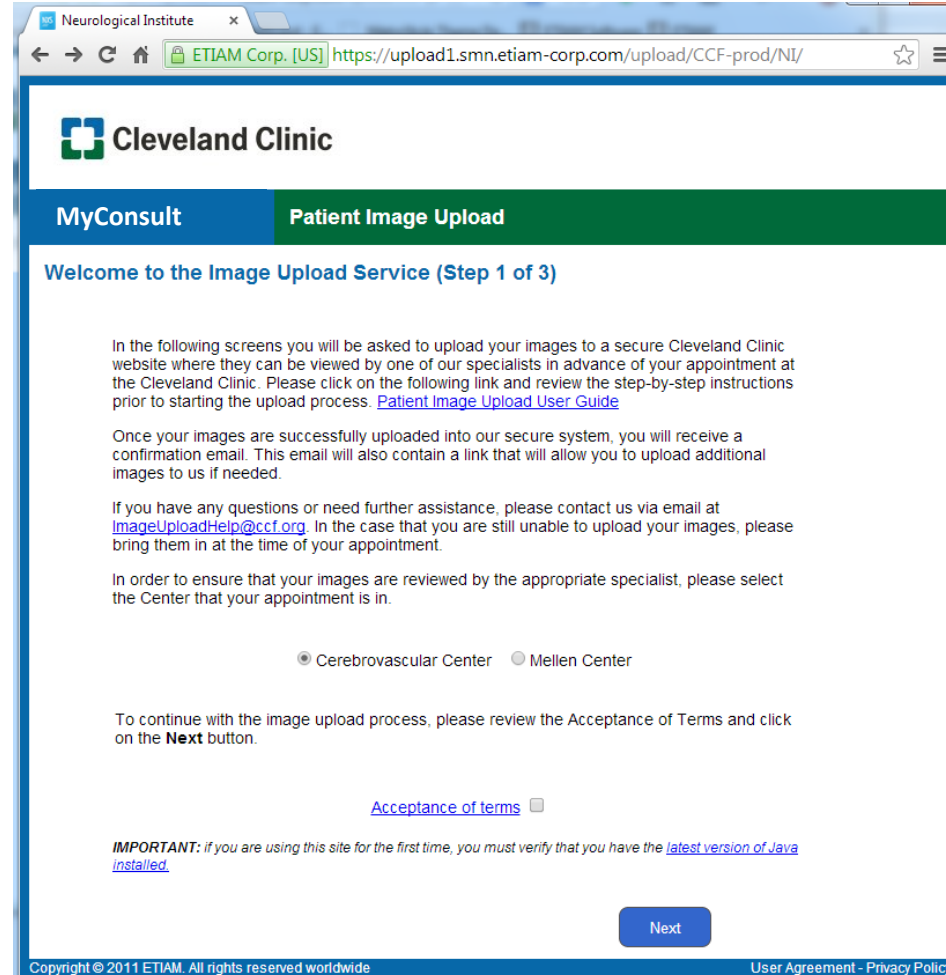
MyConsult - Patient Online Service for Second opinion

Example with Dermatology

1. Patient will be registered as a CCHS patient prior to routing images to enterprise imaging library
2. Received images will be routed to enterprise imaging library if they are viewed by a CCHS physician where a professional opinion is provided
3. Images may be routed to ACETIAM then to 3rd party image management system then to Clinical Image Library (CIL)
4. Images acquired in early phases of production use will be presented in EPIC at a patient level only. Further development will be needed to present images at a result or encounter level.
5. At least initially, the receiving end-user (triage) will manually determine which studies will be transferred to the enterprise image library.
6. Upon registration, the facility where the registration is placed will determine the assignment of the facility (local) MRN.

Step 1 of 3: Welcome form

1. Patients registered as a CCHS patient may connect themselves on MyConsult Image Upload service
2. They must accept the terms and conditions before to click on “next”



The screenshot shows a web browser window with the address bar displaying "https://upload1.smn.etiam-corp.com/upload/CCF-prod/NI/". The page header includes the Cleveland Clinic logo and the text "MyConsult Patient Image Upload". The main heading is "Welcome to the Image Upload Service (Step 1 of 3)".

The content area contains the following text:

In the following screens you will be asked to upload your images to a secure Cleveland Clinic website where they can be viewed by one of our specialists in advance of your appointment at the Cleveland Clinic. Please click on the following link and review the step-by-step instructions prior to starting the upload process: [Patient Image Upload User Guide](#)

Once your images are successfully uploaded into our secure system, you will receive a confirmation email. This email will also contain a link that will allow you to upload additional images to us if needed.

If you have any questions or need further assistance, please contact us via email at ImageUploadHelp@ccf.org. In the case that you are still unable to upload your images, please bring them in at the time of your appointment.

In order to ensure that your images are reviewed by the appropriate specialist, please select the Center that your appointment is in.

☒ Cerebrovascular Center ☐ Mellen Center

To continue with the image upload process, please review the Acceptance of Terms and click on the **Next** button.

[Acceptance of terms](#) ☐

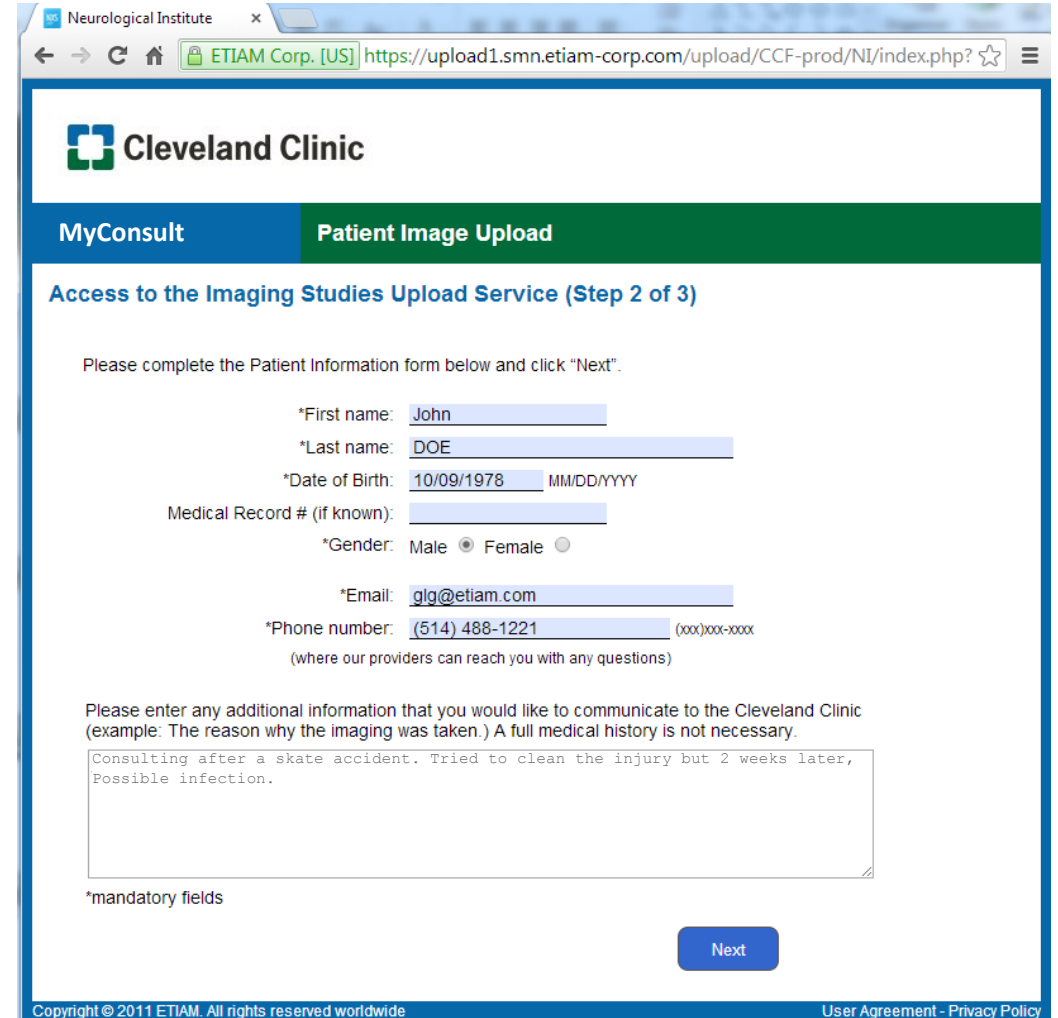
IMPORTANT: if you are using this site for the first time, you must verify that you have the [latest version of Java installed](#).

Next

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Step 2 of 3: Patient Demographics

3. Patients access the imaging upload service
4. Before to upload their images, they enter their patient's information
5. They give additional information that could help the physician in his second opinion



Neurological Institute x

ETIAM Corp. [US] https://upload1.smn.etiam-corp.com/upload/CCF-prod/NL/index.php? ☆

Cleveland Clinic

MyConsult **Patient Image Upload**

Access to the Imaging Studies Upload Service (Step 2 of 3)

Please complete the Patient Information form below and click "Next".

*First name:

*Last name:

*Date of Birth: MM/DD/YYYY

Medical Record # (if known):

*Gender: Male ☒ Female ☐

*Email:

*Phone number: (xxx)xxx-xxxx
(where our providers can reach you with any questions)

Please enter any additional information that you would like to communicate to the Cleveland Clinic (example: The reason why the imaging was taken.) A full medical history is not necessary.

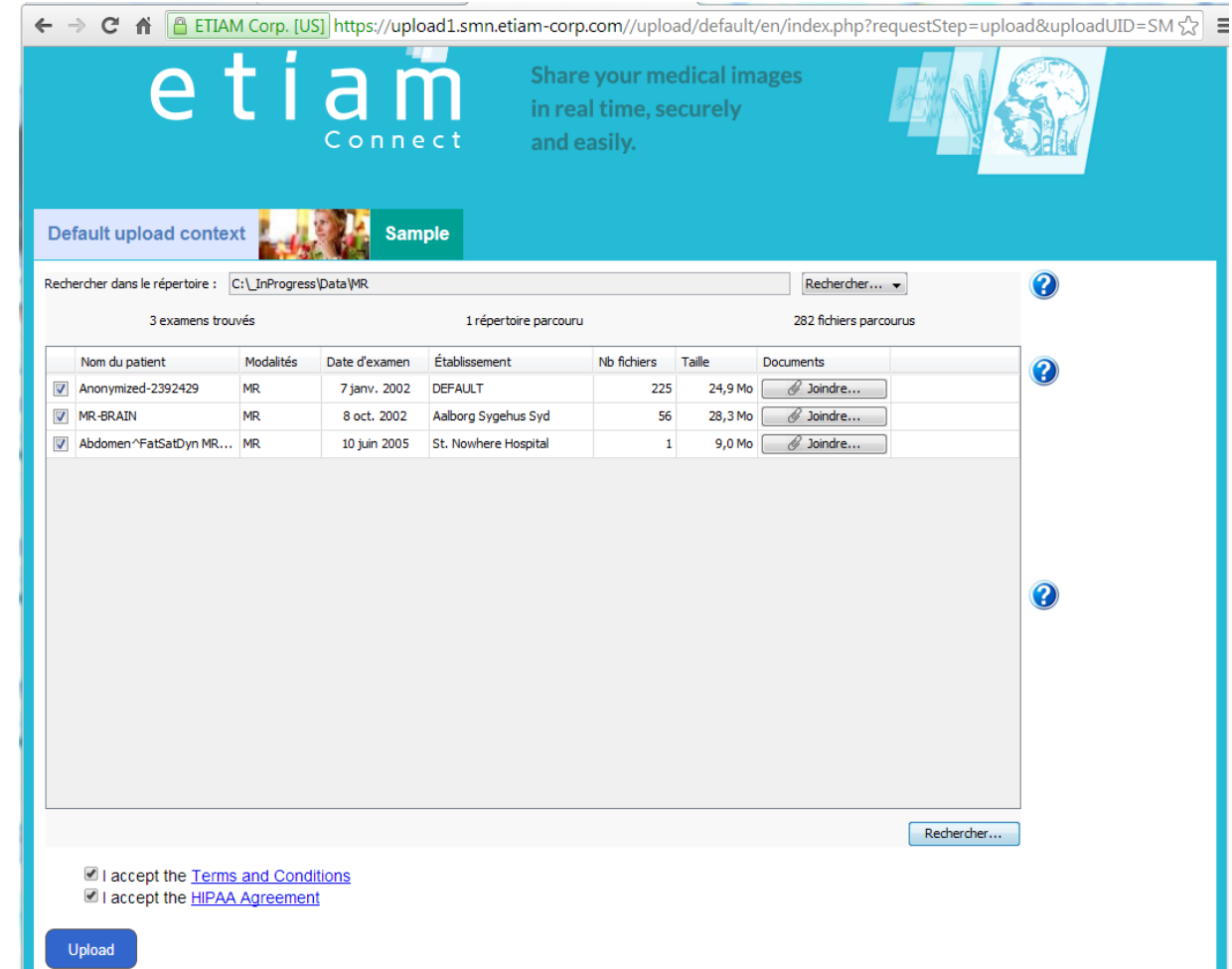
*mandatory fields

Next

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Step 3 of 3: Image Upload

- Patients can upload then their images or imaging from a directory in their computer.



The screenshot shows the 'etiam Connect' web application interface for uploading medical images. The browser address bar displays the URL: <https://upload1.smn.etiam-corp.com/upload/default/en/index.php?requestStep=upload&uploadUID=SM>.

The interface features a blue header with the 'etiam Connect' logo and the tagline 'Share your medical images in real time, securely and easily.' Below the header, there are tabs for 'Default upload context' and 'Sample'.

The main content area shows a search bar with the text 'Rechercher dans le répertoire : C:_InProgress\Data\MR' and a 'Rechercher...' button. Below the search bar, it indicates '3 examens trouvés' (3 exams found) and '1 répertoire parcouru' (1 directory searched). A table lists the found exams:

	Nom du patient	Modalités	Date d'examen	Établissement	Nb fichiers	Taille	Documents
<input checked="" type="checkbox"/>	Anonymized-2392429	MR	7 janv. 2002	DEFAULT	225	24,9 Mo	Joindre...
<input checked="" type="checkbox"/>	MR-BRAIN	MR	8 oct. 2002	Aalborg Sygehus Syd	56	28,3 Mo	Joindre...
<input checked="" type="checkbox"/>	Abdomen^FatSatDyn MR...	MR	10 juin 2005	St. Nowhere Hospital	1	9,0 Mo	Joindre...

Below the table, there is a large empty area for additional uploads. At the bottom, there are checkboxes for 'I accept the [Terms and Conditions](#)' and 'I accept the [HIPAA Agreement](#)', followed by an 'Upload' button.



Thank you for your attention

Sarah Peigne

International Sales Director

sarah.peigne@acetiam.eu





Digital Leaders in Health, Paris
Digital Health Innovations at Hasso Plattner Institute

Prof. Dr. Christoph Meinel
Dean, Scientific Director, and CEO
Hasso Plattner Institute, Potsdam, Germany

Excellence in Digital Engineering: Hasso Plattner Institute at University of Potsdam



- Top position in German university ranking (CHE)
- 500+ degree students in Bachelor and Master programs
- 160+ students at the School of Design Thinking
- 140+ Ph.D. students
- 13 research groups
- Outposts in New York, Haifa, Cape Town and Nanning

Newly Established in 2017: HPI Digital Health Center

Developing further research and teaching activities in Health

- Center head: Prof. Dr. Erwin Böttinger
- Hiring 3 full professors in Digital Health
- Offering of a Digital Health curriculum
- Developing interdisciplinary, and fostering international project collaboration



Healthcare and Medicine are Facing a Disruption – Availability of Big Medical Data Drives these Innovations

Advances in hardware enable high-throughput data processing

Challenges:

- Data is stored in heterogeneous formats across distributed sources
- Strong regulation in data protection
- Patients want to control their individual healthcare data on their own
- Thousands of health apps are targeting specific diseases whilst lacking a holistic view
- ...



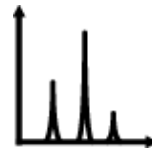
The Challenge

Distributed Heterogeneous Data Sources



Human genome/biological data

600GB per full genome
15PB+ in databases of leading institutes



Human proteome

160M data points (2.4GB) per sample
>3TB raw proteome data in ProteomicsDB



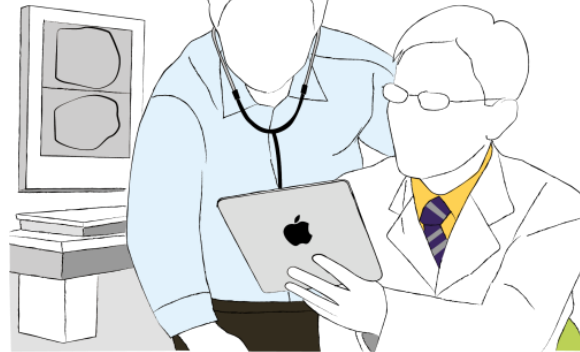
Hospital information systems

Often more than 50GB



Cancer patient records

>160k records at NCT



PubMed database

>23M articles



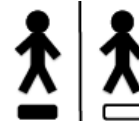
Medical sensor data

Scan of a single organ in 1s
creates 10GB of raw data



Prescription data

1.5B records from 10,000 doctors and
10M Patients (100 GB)



Clinical trials

Currently more than 30k
recruiting on ClinicalTrials.gov



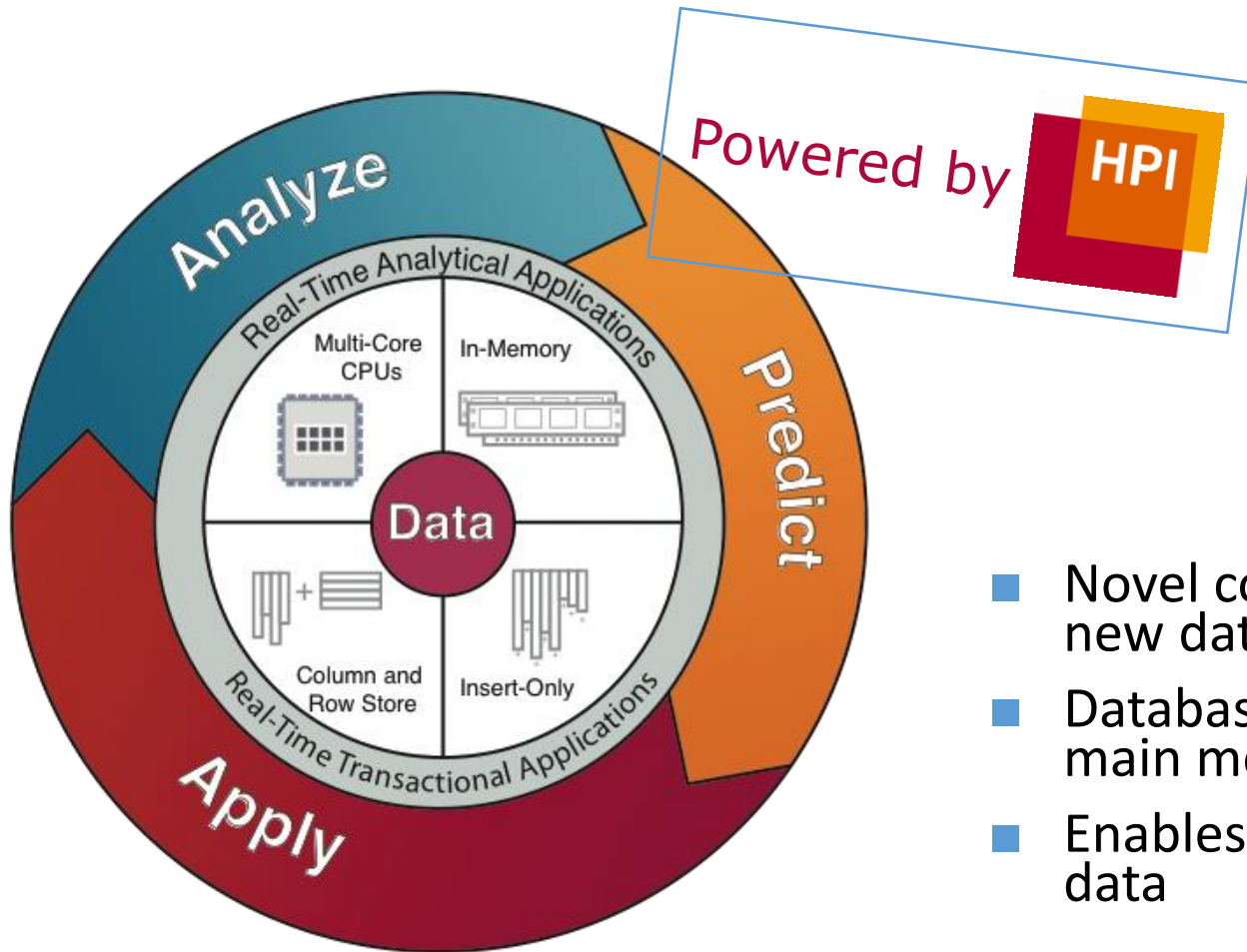
Routine Data

Medical and
treatment costs

Digital Health Innovations at
HPI

Prof. Dr. Chr. Meinel

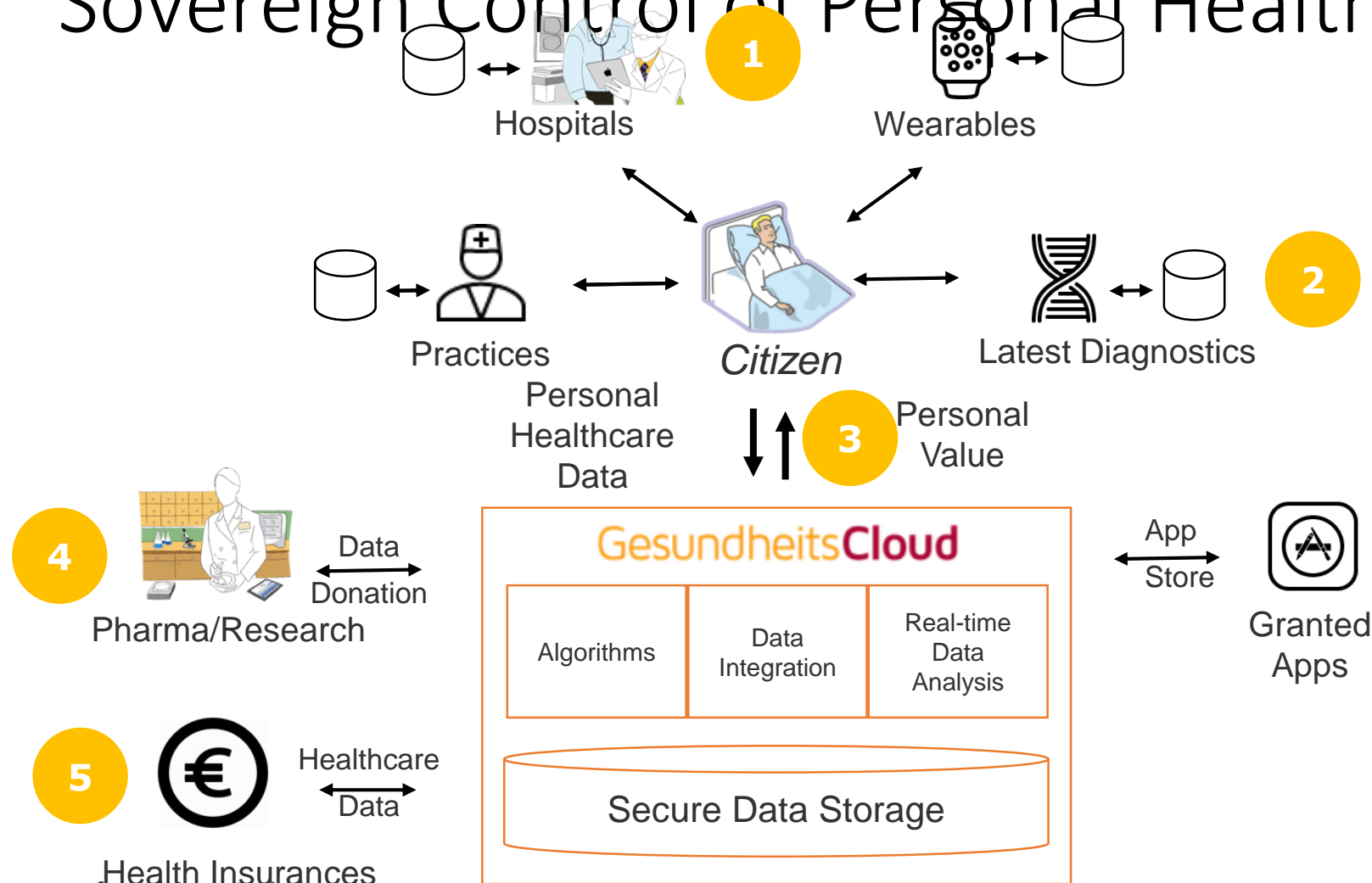
HPI Innovation in Data Base Technology: In-Memory Database Technology



- Novel computer architecture allows new database technology
- Database is completely stored in the main memory
- Enables real-time processing of big data

How to Deal with the Strong Data Protection Regulations ?

Sovereign Control of Personal Healthcare Data



Federal Research Ministry Medical Informatics Initiative



Federal Ministry
of Education
and Research



- Concepts developed since 2016, funded consortia start their work in 2018
- HPI contributes to HiGHmed consortium
- Aims, amongst others:
 - Interoperable exchange and combination of hospital data
 - Use-case specific research
 - Interactive a

DIFUTURE
Data Integration for Future Medicine

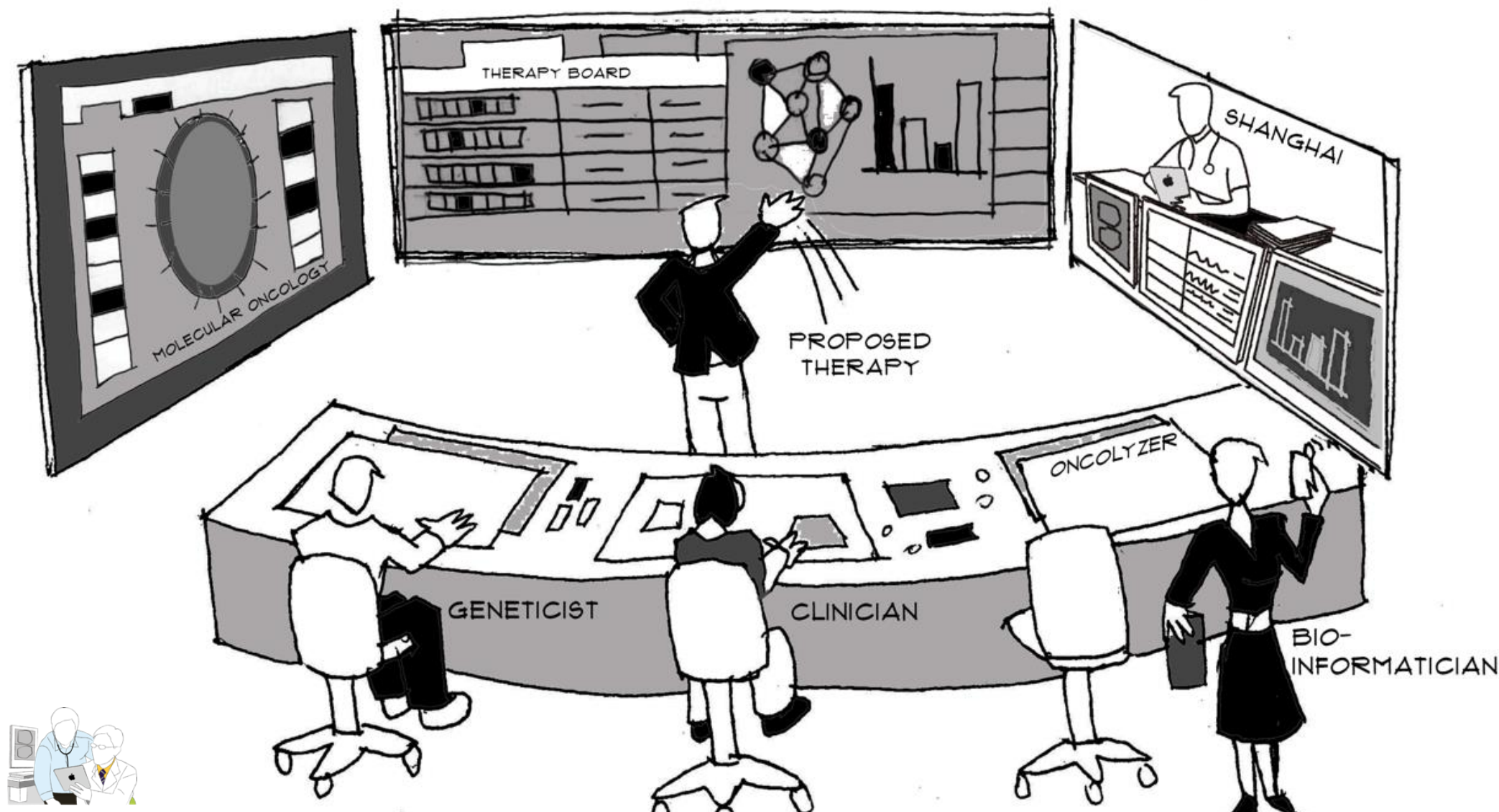
HiGHmed
Medical Informatics

miracum

smith
Smart Medical Information
Technology for Healthcare



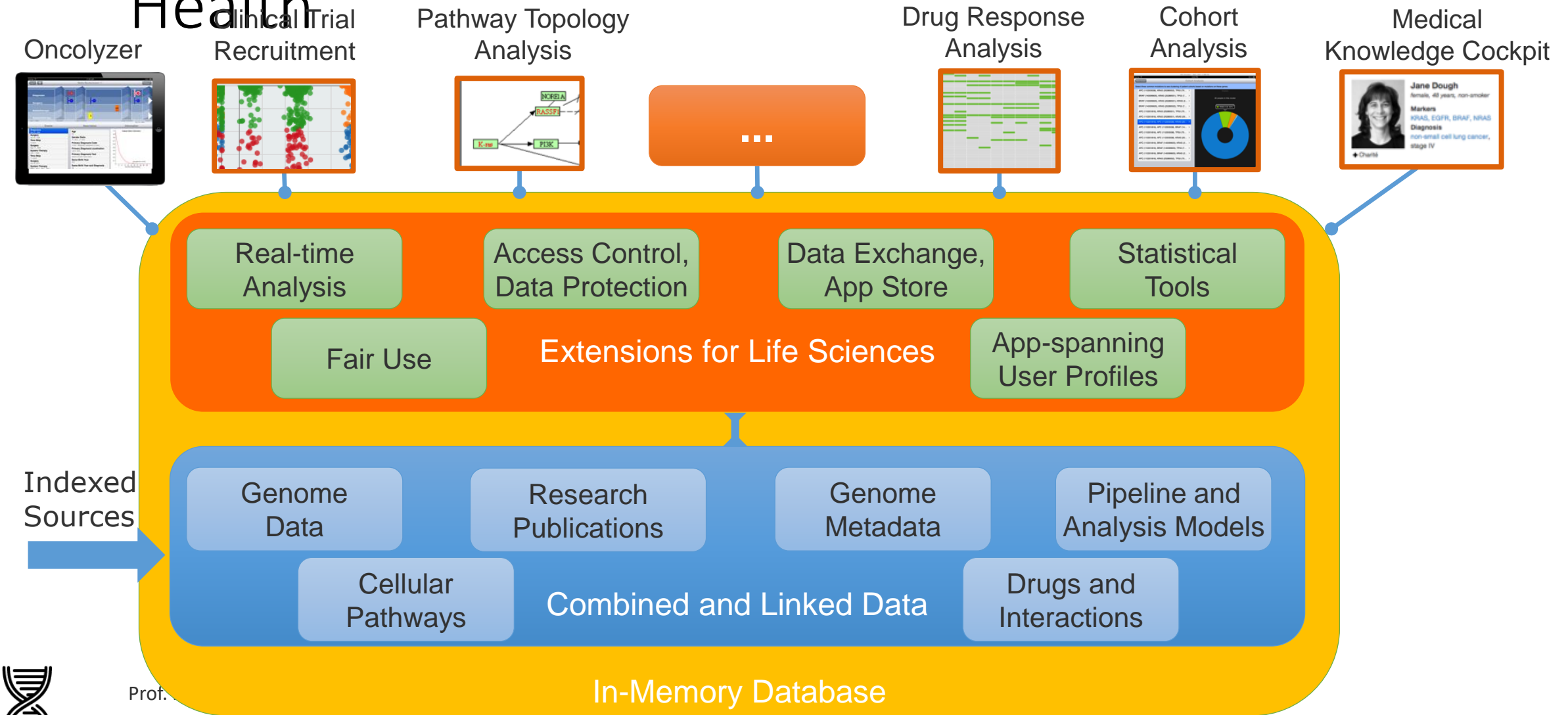
E.g. Interdisciplinary Tumor Board: Incorporating Latest Medical Knowledge



DOCTOR



E.g. AnalyzeGenomes.com: An In-Memory Computing Platform for Digital Health

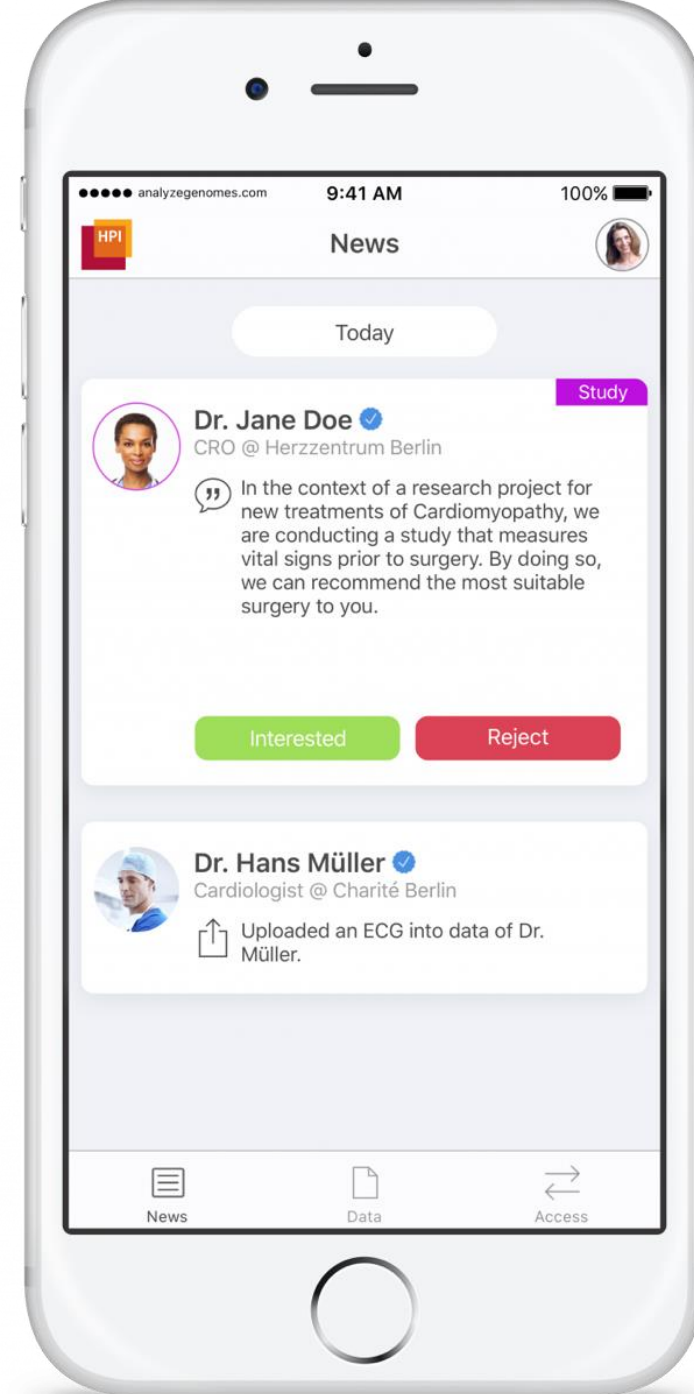


Data Donation Pass: Control Your Personal Health Data

- Holistic access to your personal healthcare data
- Donate de-identified healthcare data to support registered research projects
- Sign-up for personalized notifications, e.g. latest healthcare programs or clinical trials
- Result: Indication to improve their

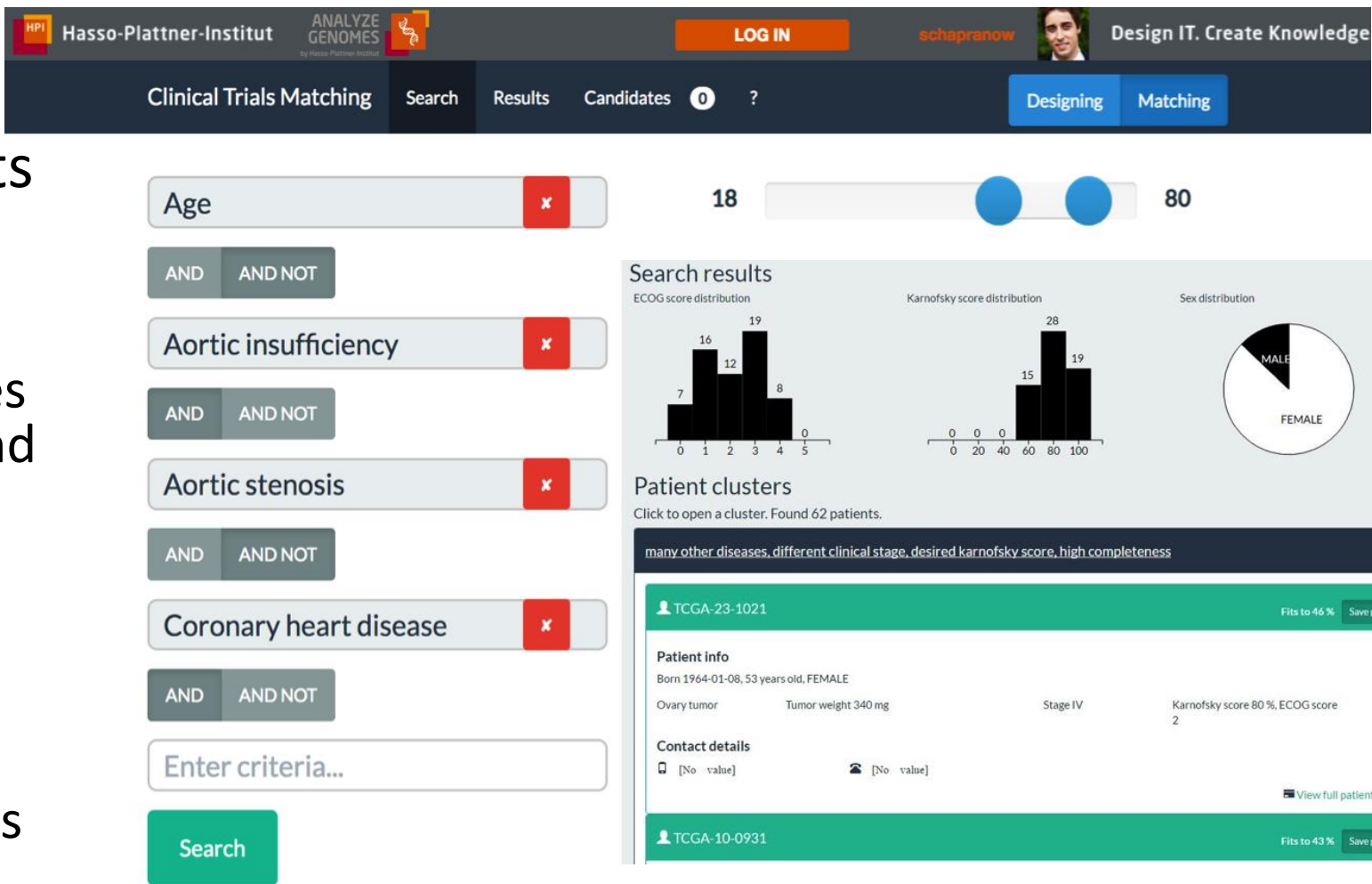


motivated

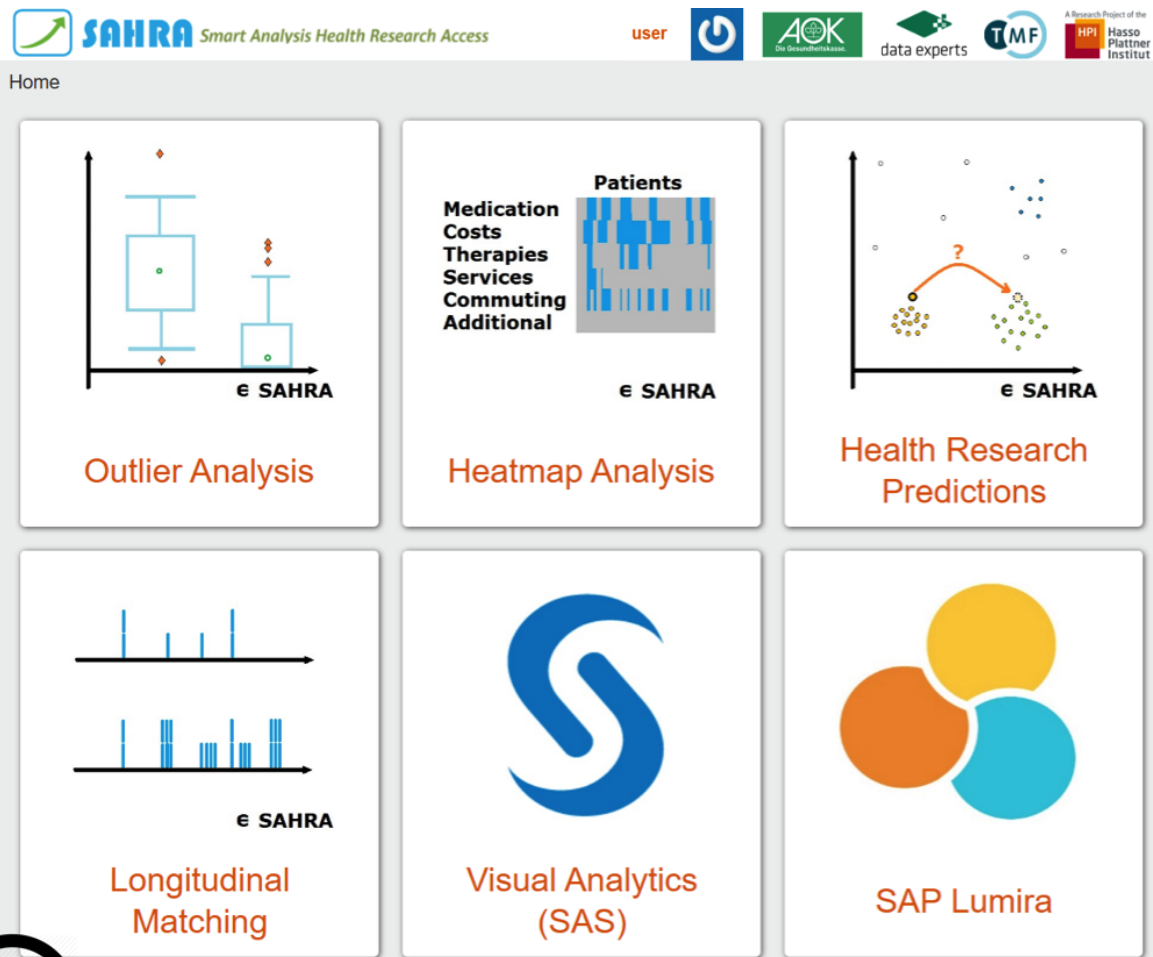


Real-time Assessment of Clinical Trial Candidates

- Targeted access to patient cohorts, i.e. highly engaged patients
- Real-time cohort data analysis
- Improves clinical trial processes to reduce recruitment costs and dropout ratio, e.g.
 - directed communication,
 - real-world data for design,
 - candidate identification, and
 - reassessment of screened/former participants



Secondary Use of Health Insurance Data



- Analysis dashboard combining functions per use case
- Providing expert-facing entry point to individual apps
- Provides application-wide authentication / single sign on

Supported by:



Federal Ministry
for Economic Affairs
and Energy

on the basis of a decision
by the German Bundestag



HPI Health Cloud Enables Digital Business Models



Citizen

- Access to personal healthcare data
- Sovereign control of personal data
- Access to individualized prevention and care programs



Medical Doctors

- Holistic view of patient anamnesis
- Clinical decision support
- Improved access to latest medical innovations, e.g. clinical trials



Pharma/Research

- Access to donated real-world data within the research database
- Directed communication with engaged users



Health Insurances

- Access to representative cohort data
- Provider of individual prevention programs
- Real-time insights in population specifics



App Providers

- Access to secure data processing and analysis platform
- Real data for app development and evaluation
- Access to indication-specific user

Society: Cost reduction and improved healthcare services

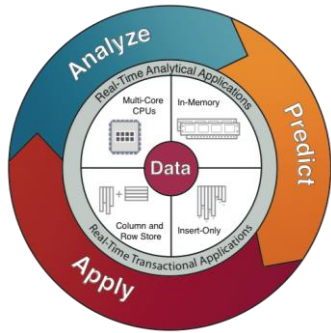


- Thank you for your attention!

Contact:

Prof. Dr. Christoph Meinel
meinel@hpi.de
www.hpi.de/meinel

Innovations from HPI



In-Memory Data Management:

Basis for SAP HANA



MOOCs:

Free, interactive online courses



tele-TASK:

Mobile system for event and lecture recording & portal



ID Leak Checker:

Is someone spying on you?



Analyze Genomes:

Real-time analysis of medical data



HealthCloud:

Platform for more efficient health services



Schul-Cloud:

Digital teaching and learning content available everywhere

Open Campus HPI: Our MOOC Platform openHPI – Germany's Largest Lecture Hall ...

Course Offer: Open, free and interactive online courses on IT topics



Code of Life - When Computer Science Meets Genetics



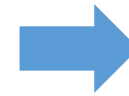
Linked Data Engineering



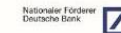
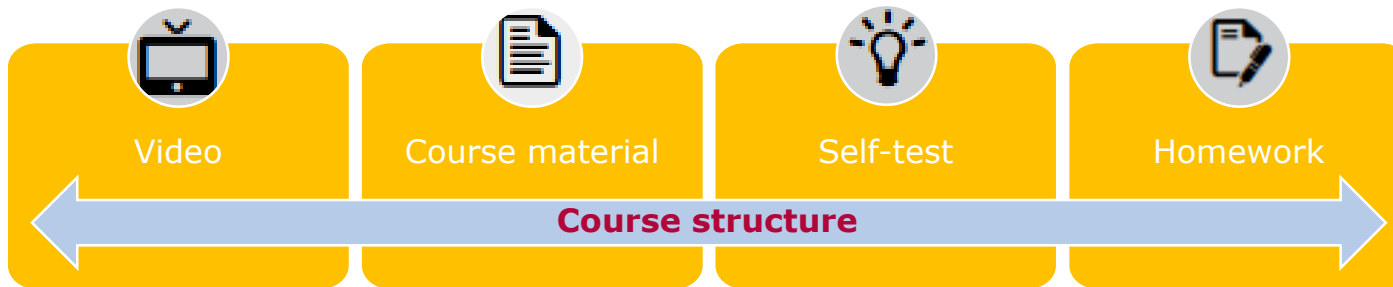
BPMN Meets DMN: Business Process and Decision Modeling



Social Media - What No One has Told You about Privacy



Educational Formats: Interactive and with social media elements



<https://open.hpi.de/>

Prof. Dr. Chr. Meinel

- 450,000+ enrollments
 - 60+ courses and workshops
 - Users from 180+ countries
- Digital Health Innovations at HPI



Open Campus HPI: MOOCs for Teaching, Business, and Society



Getting Started with Data Science



SAP HANA Cloud Platform* Essentials (Repeat)

openSAP

- Development and support by openHPI team
- 2,000,000+ enrollments, 90+ courses
- <https://open.sap.com>



Introduction to Zika virus disease



Risk communication essentials



- Cooperation with WHO since 2016
- Hosting and support by HPI
- <https://openwho.org/>



Mastering Digital Transformation



Modeling Business Processes with BPMN

mooc.HOUSE

- MOOCs of partners
- <https://mooc.house/>



3rd International Symposium on “Big Data in Medicine” a Joint Cooperation with HIMSS Impact

International Symposium on Big Data in Medicine

A Series of Successful Collaborations

2015	2016	2017
<ul style="list-style-type: none"> ■ Handling of Patient Data ■ Processing and Analysis of -omics Data ■ Biomarker Discovery 	<ul style="list-style-type: none"> ■ Translation into Clinical Routine ■ Big Data and Citizen Data Access ■ Drug Development 	<ul style="list-style-type: none"> ■ Values for Citizens and Patients ■ Impact on Medical Professions and Business Models ■ Latest Trends in Digital Health





I Wish You All an Interesting and Fruitful Symposium

Hasso Plattner Institute
Griebnitzsee Campus
14482 Potsdam