Smart Pharma
CONSULTING

Digitalization of the Value Chain

The Best-in-class Series

Application to Pharma Companies

Smart Pharma Consulting proposes to share facts, figures and thoughts regarding the impact of digitalization on the value chain of pharma companies

Introduction

Context

- The purpose of this issue is not to evaluate if digitalization creates value for pharma companies

- There are yet enough evidence showing the efficacy and efficiency gains driven by digitalization along the value chain of pharma companies

- However, the key issue which remains to be addressed is:

  "How to take full advantage of digitalization and its components[1]"
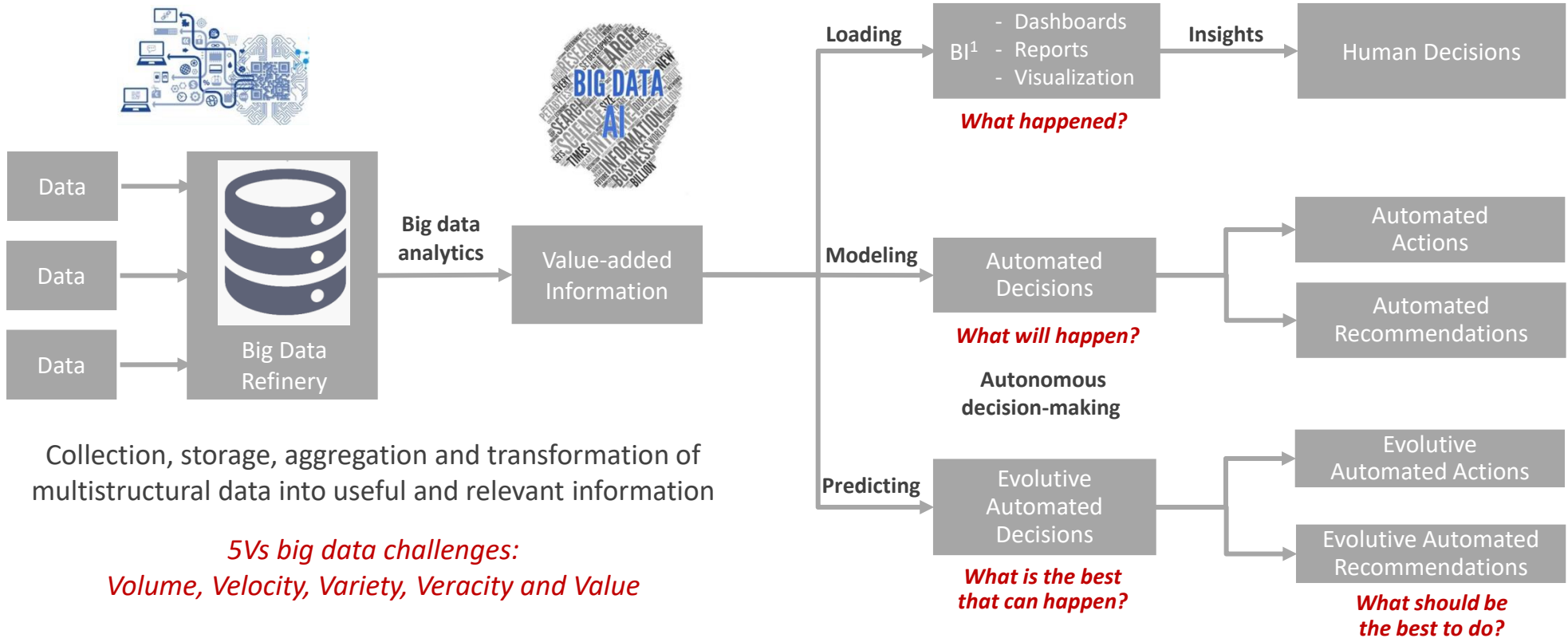
Objectives

- This position paper intents to:

  – Show through selected examples how digitalization can significantly enhance pharma companies' performance along their value chain

  – Highlight operational and organizational hurdles associated to digitalization

  – Make recommendations to take full advantage of digitalization

Methodology

- Literature search and selection of cases illustrating the digitalization of pharma companies' value chain

- Analysis of the benefits created by digitalization and of the strategic implications for pharma companies

[1] Big data, artificial intelligence, machine learning programs, information systems

Big data, artificial intelligence (AI) and machine learning (ML) programs largely simplify complicated processes in the healthcare sector and have a significant impact across the value chain

Digitalization – Key principles

Collection, storage, aggregation and transformation of multistructural data into useful and relevant information

5Vs big data challenges:
Volume, Velocity, Variety, Veracity and Value

What happened?

What will happen?

Autonomous decision-making

What is the best that can happen?

What should be the best to do?

Pharma companies are directly concerned by the growing importance of digitalization of their business model and the arrival of new entrants likely to be competitors and/or partners

Context of digitalization in the pharma industry

| Big Data role	Digital new players entry
• The role of Big Data in pharma companies is growing as time goes on due to the **business model transition:** – Ongoing and mounting pressure to decrease global pharma costs – Need for emergence of value-based medicine reimbursement models – Acceleration of the precision medicine demand due to imprecise medicine side-effects – Decline in healthcare quality – Digitalization of the pharma industry approach – Decline in R&D productivity – Falling of operating margins	• Beside traditional health actors, a myriad of new entrants appears and participates in the creation of value around the data health: – The GAFAM[1] – The BATX[2] – E-health start-ups – Collectors, carriers, hosts and scientists of data, etc. • Health data market is organized around a new value chain where **disruptive innovations** are often led by new players or through strategic partnerships combining technological and health expertise • The pharmaceutical sector has undertaken a **digital transformation** with a gradual adoption of digital techniques and tools

[1] *Google, Apple, Facebook, Amazon, Microsoft –* [2] *Baidu, Alibaba, Tencent and Xiaom*

Accessing and analyzing the right data to deliver sustainable business value is the main challenge for pharma companies

Digitalization opportunities and challenges in the pharma industry

OPPORTUNITIES →

← **CHALLENGES**

1 Improved decision making

2 Improved healthcare quality

3 Improved healthcare efficiency (cost reduction)

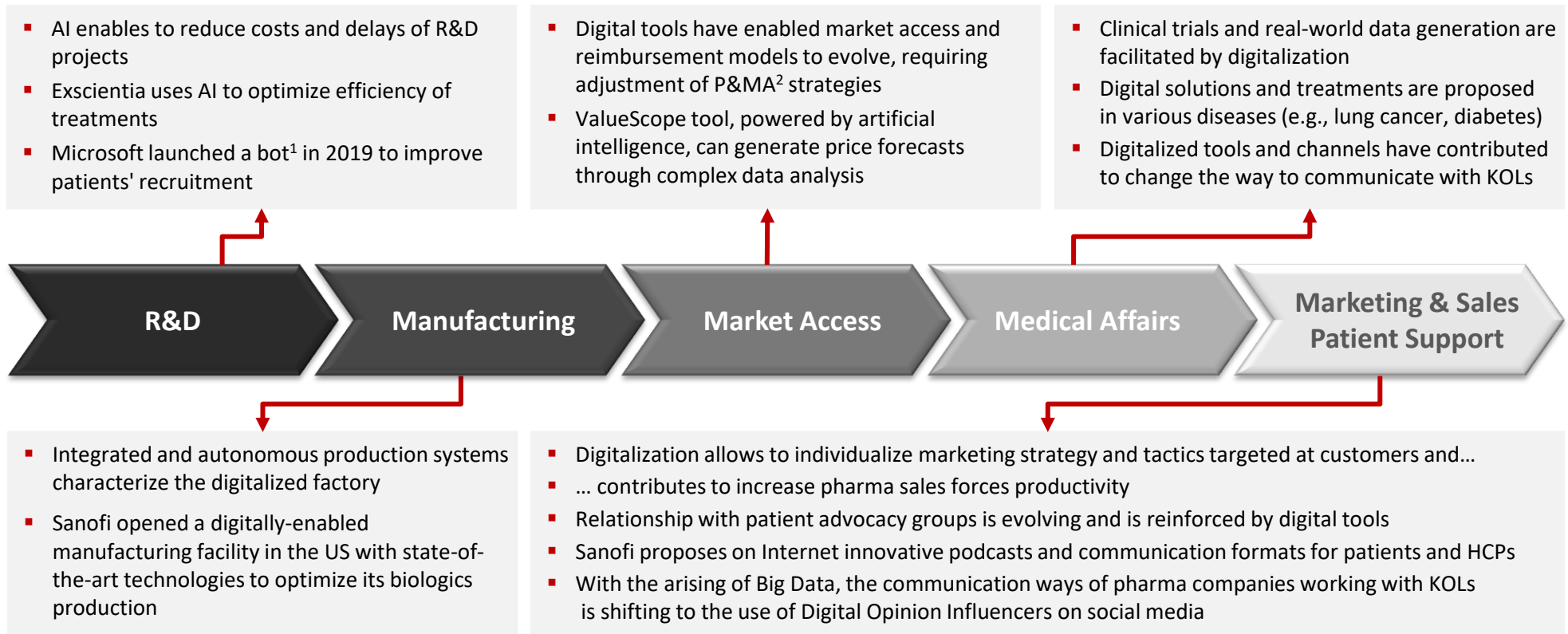**4** Customer relationships optimization

5 New services development
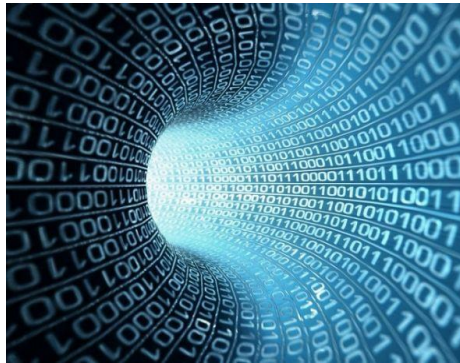
*90% of worldwide data have been generated in the last 2 years*

1 Data volume (storage, access)

2 Data quality and variety (standardization)

3 Data privacy and security (anonymization, data governance)

4 Data analysis (algorithm, predictive analysis, artificial intelligence)

Digitalization opens horizons to improve the relevance of decisions made by pharma companies along each component of their value chain

Digitalization of pharma companies' value chain

- AI enables to reduce costs and delays of R&D projects
- Exscientia uses AI to optimize efficiency of treatments
- Microsoft launched a bot[1] in 2019 to improve patients' recruitment

- Digital tools have enabled market access and reimbursement models to evolve, requiring adjustment of P&MA[2] strategies
- ValueScope tool, powered by artificial intelligence, can generate price forecasts through complex data analysis

- Clinical trials and real-world data generation are facilitated by digitalization
- Digital solutions and treatments are proposed in various diseases (e.g., lung cancer, diabetes)
- Digitalized tools and channels have contributed to change the way to communicate with KOLs

R&D → **Manufacturing** → **Market Access** → **Medical Affairs** → **Marketing & Sales Patient Support**

- Integrated and autonomous production systems characterize the digitalized factory
- Sanofi opened a digitally-enabled manufacturing facility in the US with state-of-the-art technologies to optimize its biologics production

- Digitalization allows to individualize marketing strategy and tactics targeted at customers and…
- … contributes to increase pharma sales forces productivity
- Relationship with patient advocacy groups is evolving and is reinforced by digital tools
- Sanofi proposes on Internet innovative podcasts and communication formats for patients and HCPs
- With the arising of Big Data, the communication ways of pharma companies working with KOLs is shifting to the use of Digital Opinion Influencers on social media

AI enables to reduce costs and delays, and thus improve return on R&D investment, notably through predictive models and connected devices, facilitating the design and execution of trials

R&D
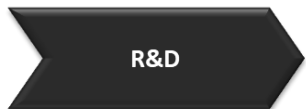
R&D digitalization

Digitalization

- R&D costs represent ~**25%** of pharma companies sales, while it takes ~12 years to bring a treatment to market
- In silico research[1] increases **effectiveness** and **safety** of treatments developed and reduces costs and time
- Clinical trial protocols are becoming more complex and **competition** for **sites** and **patients** is **increasing**
- **80%** of the **trials** do **not meet** the initial **deadlines**
- The **advanced analysis** of protocols by **predictive algorithms** allows to **evaluate** the impact of each decision on the **feasibility** of **trials**…
- …and makes it possible to **anticipate** low signal level problems and thus **prevent** occurrence of a **delay**
- **Connected solutions** facilitate **remote monitoring** and **real-life data collection**, and **decentralization** (partial / complete) of **trials improves** their **efficiency**, from recruitment to analysis

Applications

- Insilico Medicine **designed, synthesized** and preclinically **validated** a DDR1 kinase inhibitor involved in fibrosis in 46 days, which is **15 times faster** than traditional pharma companies, by using AI
- Benevolent[AI] selected, in **3 days**, 6 molecules among 370 potentially effective on Covid-19, thanks to an AI platform
- Stanford University **recruited 11,000 patients** in **24 hours** for a study on cardiovascular disease using **Apple's ResearchKit**,…
- …a software platform that offers a series of applications for researchers
- **Roche** has developed a **remote monitoring platform** for **Huntington's disease**, designed **to collect data** from patients' smartphones and smartwatches as **part of a phase I-II trial**

[1] *Research using computer models (e.g., use of AI in predictive modeling, to autonomously prioritize candidate molecule structures likely to be optimal)*

Exscientia uses AI to optimize efficiency in treatment R&D, while Microsoft launched a bot[1] in 2019 to improve patients' recruitment
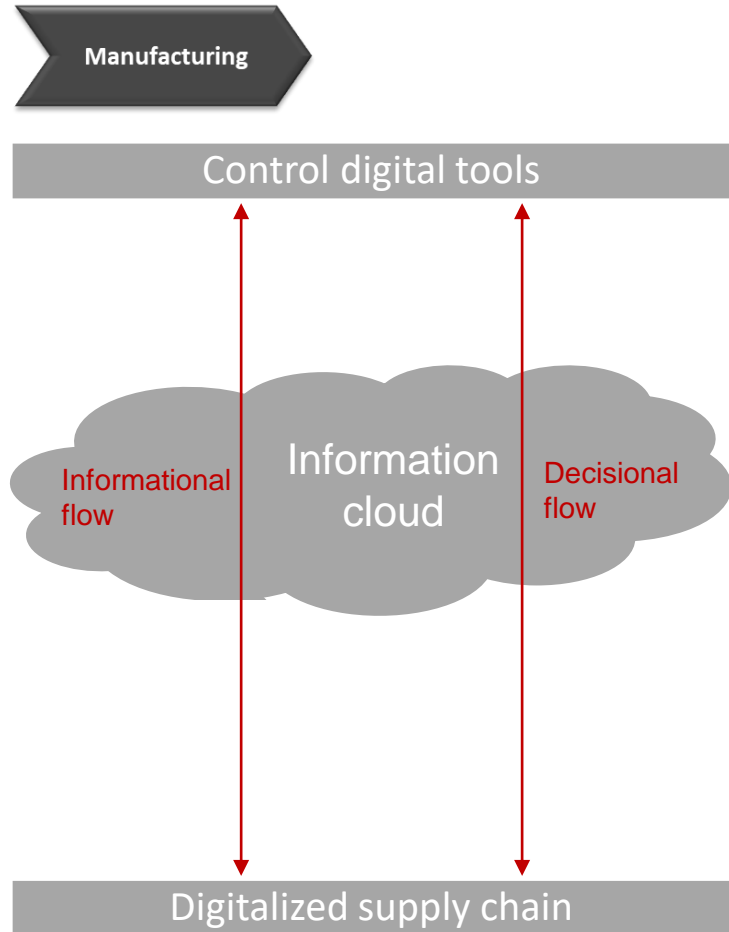
R&D

R&D digitalization: case studies

Exscientia

Microsoft

Exscientia	Microsoft's lab
▪ Exscientia is a UK-based company that uses AI to discover, design and develop drugs faster and more efficiently	▪ Microsoft has developed a chatbot – originally started as a hackathon project in Israel and named **Clinical Trials Bot** – to connect patients with clinical trials
▪ The method consists of combining **genetic and scientific global literature data** in Machine Learning algorithms to **identify or confirm drug targets** of interest	▪ The AI-based **automatic reading system** proposes, after the patient answers a questionnaire, links to clinical trials with corresponding inclusion/exclusion criteria
▪ In 2020, a molecule in their pipeline went from preclinical to clinical in **12 months**, compared to 5 years without AI	▪ This initiative, that **facilitates recruitment,** is part of a larger Microsoft project to create automated **patient triage programs**
▪ Recently, Exscientia has signed **multiple partnerships** with pharma companies such as Sanofi and BMS	▪ The solution is **proposed to pharma companies** which may use it to **find trial participants**

[1] A bot is an application programmed to perform automated and repetitive tasks

Industry 4.0 is characterized by integrated, autonomous production systems, segmented into 3 levels: control tools, information cloud and digital production chain

Manufacturing

Control digital tools

Information cloud

Informational flow

Decisional flow

Digitalized supply chain

Production digitalization

- **Industry 4.0**, refers to the use of digital tools in production activities for **continuous improvement, integration, optimization** and **empowerment of processes**

- It is declined in 3 levels:

  - **Set of virtual tools** offering mobile, collaborative, dynamic decision-making interfaces and advanced analysis on the production performance (e.g., mobile app)

  - **The information cloud** centralizing the data of the supply chain, including internal and external information, and allowing their exploitation (e.g., CMO[1] information)

  - **The digitalized production chain** or "smart" factories that are connected and equipped with tools that contribute to improve industrial performance (e.g., RFID[2] tag, sensors)

[1] Contract Manufacturing Organization – [2] Radio Frequency Identification

Sanofi opened its first digitally-enabled manufacturing facility in the US with state-of-the-art technologies to optimize its biologics production

Manufacturing

Production digitalization: case study

Factory of the Future at Sanofi

Sanofi digitally-enabled manufacturing facility

- Sanofi opened, in 2019, its **first digitally-enabled manufacturing facility** in Framingham (US) to manufacture biologics for its Specialty Care portfolio

- Sanofi's **$400 million investment** in R&D, biologics manufacturing and production improvements means that all manufacturing stages are controlled through state-of-the-art analytical techniques that forecast and avoid variations to improve performance and ensure quality

- The facility's advanced **data-driven** manufacturing technologies enable Sanofi to achieve higher levels of productivity, agility, flexibility and real-time adjustment

- The whole industrial process is **80 times more productive** than a traditional factory

- It can make medicines in **less time for twice the number of patients** and all within a **smaller environmental footprint**

- The digital transformation of Sanofi's manufacturing network is a key element of the company's goal to leverage **better use of data** to respond to fast changing patient needs, and speeding up the production of new medicines

Sources: Sanofi opens its first digitally-enabled continuous manufacturing facility (2019) – Smart Pharma Consulting analyses

Market access and reimbursement models have evolved with the advent of digital tools, requiring a transformation of the P&MA[1] strategies adopted by pharma companies

Market Access

Market Access digitalization

Pharma companies	Authorities and payers
■ Combining a digital solution with a traditional therapeutic product can improve the **value proposition** to patients...	■ Digital solutions contribution is attracting a lot of interest from authorities, payers and healthcare providers...
■ ... and allow to claim a **better price level** and **reimbursement** conditions	■ ...but also generates a certain apprehension because of the difficulties related to the:
■ Those solutions require the development of **innovative P&MA strategies** and therefore an adaptation of current Market Access (MA) activities, processes and functions	– Supervision of their use – Evaluation of their benefits – Determination of their price
■ Digital has also brought 2 types of tools impacting MA:	■ Current methods for evaluating these new digital solutions, whether stand-alone or combined with a drug, are ill-suited
– Activity optimization tools (e.g., price prediction) – Internal communication platforms (e.g., application that automatically adapt to regulatory constraints)	■ Digital communication tools help strengthen pharma companies' interactions with the authorities

[1] Pricing & Market Access

Artificial intelligence has a strong potential of use within Market Access as illustrated by the ValueScope tool, capable of generating price forecasts through data analysis

Market Access

Market Access digitalization: case study

OKRA Leap ahead in the intelligence race

ValueScope Liberate Your Pricing Experts

Okra technologies' ValueScope tool

- Okra technologies, a UK-based company, has been developing **AI-based solutions in P&MA**[1], Sales and Medical since 2015

- The ValueScope tool allows teams to perform **scenario analysis** of negotiations with payers to determine the pricing outlook for a new treatment

- It uses **deep learning algorithms** that analyze millions of data points (e.g., clinical trial results, latest pricing data, regulatory submissions)

- The system allows to:

  – Generate price forecasts with over **90% accuracy**

  – Model **customized** scenarios (e.g., profile analysis vs. competitors)

  – Drastically reduce **analysis time**

Sources: Okra technologies website – Smart Pharma Consulting analyses

[1] *Pricing & Market Access*

The use of digital technology in clinical trials facilitates patient recruitment and retention, reduces associated costs and generates real-world data

> **Medical Affairs**

Medical Affairs digitalization: clinical data generation

sanofi

Real-world data generation	Case study: VERKKO trial application

▪ Digital technology represents an opportunity to generate **real-world data** and thus allows patients to play an increased role to determine the value of marketed drugs and to design next-generation products
 	
▪ Their development has been facilitated by **rapid advances in technology tools**[1]
 	
▪ The generation of these data offers a better understanding of **real-world care pathway** with the help of new indicators such as PROMs (Patient-Reported Outcomes Measures) and PREMs (Patient-Reported Experience Measures) enabling to evaluate the quality of care as perceived by patients
	▪ A Phase IV trial has been launched, fully digitally using a **connected blood glucose meter**, by Sanofi in collaboration with Mendor and eClinicalHealth
	
	▪ 60 patients **recruited via Facebook** with an 81% conversion rate (recruitment/application), which is better than typical recruitment results
	
	▪ The digitalization of the study resulted in a:
	
	   – High patient satisfaction
	
	   – Reduced coordination time by 2/3
	
	   – Patient-centered study design

Digital solutions have recently been developed to treat or support treatment, as illustrated by Moovcare in lung cancer and mySugr in diabetes

Medical Affairs

Medical Affairs digitalization: e-health

E-health solutions	Movecare	MySurg
▪ E-health solutions offer new opportunities in prevention, diagnosis, treatment and patient care...	▪ **Digital therapeutic** based on a weekly questionnaire to detect recurrence or complication during **follow-up of lung cancer**	▪ **Application connected** to blood glucose monitoring devices acquired by Roche in 2017
▪ ...and represent a differentiation axis for pharma companies with patients and HCPs		
▪ Among these technologies, **Digital Therapeutics (DTx)** are therapies developed in digital formats, clinically validated, allowing to complement or replace traditional drugs	▪ Patient data analyzed by artificial intelligence and results transmitted to the HCP	▪ Blood glucose management dashboard can be shared with the physician and **provides personalized recommendations** to the patient (e.g., nutrition, insulin dose calculation)
▪ They are subject to a MA and can potentially be reimbursed	▪ Significant improvement in **overall survival** (+7.6 months)	

Digital tools and channels offer a wider choice of innovative ways to deploy medical communication strategy and have changed the profile of KOLs

Medical Affairs

Medical Affairs digitalization: medical communication

Digital channels	Content personalization	KOL / DOL
▪ Use of **innovative formats** to communicate with HCPs (e.g., chatbots, podcasts, webinars) is increasing	▪ As for medical reps, AI-based tools provide a **better understanding** of HCPs' needs (e.g., habits, learning preferences)…	▪ The emergence of **digital channels** has changed the landscape of medical influencers:
▪ **Digitalization** of **MSL activities** and of **interactions with KOLs** has become increasingly important	▪ …and **advanced analysis** of interactions allows to propose the most engaging and impactful content for HCPs	— **DOLs** (Digital Opinion Leaders) who have an influential role in sharing medical information on social networks, coexist with…
▪ Post-Covid-19, **66% of KOLs** surveyed by the MSL Society indicated that they preferred to use **digital tools over face-to-face visits** with MSLs	▪ Digital tools are particularly useful to **disseminate specific data** to KOLs because they facilitate the identification, collection, storage and structure of scientific and medical information	— **KOLs**, knowing that less than 30% of the latter have a social media presence
▪ Thus, more and more MSLs and medical advisers adopt an **omnichannel approach** with KOLs		▪ Ideally, companies will identify experts that combine the strengths of **traditional and digital** thought leaders and develop relationships with the most relevant of them

Digital technology has facilitated the development of a pharmaceutical marketing that is more focused on HCPs' needs and that allows to individualize the approach

Marketing & Sales
Patient Support

Marketing digitalization: strategy

Segmentation	Targeting	Positioning
■ Digital technology, completed by specific insights generated by a closed-loop feedback process, enables to develop precise profiles of HCPs	■ Leveraging big data analysis with AI[1] can help pharma companies better target HCPs through a:	■ The analysis of the multiple sources of data collected regarding HCPs prescribing behavior, needs and field of interest will be particularly helpful to design an optimal positioning of the marketed drugs
■ The profiling of each HCP is thus continuously enriched by different sources of information that are combined	– More precise identification of their needs and field of interest – Dynamic segmentation based on a real-time information	■ If the attributes of the drugs cannot be changed from one HCP to another, or for the same HCP overtime…

■ Segmentation criteria will include:
  – Prescribing potential
  – Willingness to interact with pharma companies
  – Sensitivity to marketing and sales activities
	■ The targeting criteria along with the nature and level of interactions can be adjusted on a continuous basis
	
	■ Such a dynamic targeting is based on a dynamic segmentation that will significantly improve the impact of marketing and sales activities
		■ … however, it is possible to adjust the communication considering each individual HCP profile, experience and opinion at a given point of time

Digital technology has facilitated the development of pharmaceutical marketing that has become more focused on the needs of "customers" thanks to tools allowing an individualized approach

**Marketing & Sales
Patient Support**

Marketing digitalization: contents & channels optimization

Contents & Channels

- Deployment of digital approaches and tools such as **CLM**[1] and **CRM**[2], powered by **AI**, has enabled to adopt an individualized customer-centric marketing strategy based on big data analysis

- Data collection and analytical tools facilitate the identification of **"insights"** from which companies can:
  - Develop personalized and engaging content for HCPs
  - Define the most relevant "next-best" actions to follow
  - Measure the relevance and efficiency of the proposed actions / services

- **AI enables** pharma companies to **develop** and **deliver** more **appropriate contents** and to **optimize** the **use** of different communication **channels** to the **right audience**, such as HCPs, for an **improved engagement**

- Digitalization will facilitate the **integration**, **combination** and **interconnection** of the various **contents**:
  - Coming from **various** pharma companies' **departments** (e.g., corporate communication, medical, marketing, sales)...
  - ... conveyed through **various channels** (e.g., face-to-face interactions, remote meetings, webinars, podcasts, chatbots, e-mails, social networks, etc.)...
  - ... towards **various customers** (e.g.; patients, PAGs, payers, health authorities)

- If marketing interactions are becoming increasingly digital, the **human touch remains essential** to **ensure excellence in execution**

If digitalization of pharma sales forces contributes to increase productivity, it remains an enabler to support medical representatives who are determinant to engage physicians

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Promotion digitalization: sales force effectiveness

- The **access** to HCPs is becoming more and more **restricted** due to a **lack of time and interest**

- Although the digitalization of medical calls or e-detailing **complements** face-to-face interactions, it remains modest (<10% of calls) outside the crisis period linked to the Covid-19 pandemic

- Most of HCPs consider **remote calls** to be of **insufficient quality** and **impractical**

- However, practices are tending towards a **hybrid digital / physical** model that must be part of an **omnichannel** coordinated **approach**

- For several decades, pharma companies have equipped their sales representatives with **digital tablets** (e.g., iPad) to replace traditional visual aids

- These tablets are **only used** in ~25% of face-to-face calls because they are **not practical** and available **information** during calls are **limited by regulations**

- **Big data** and **AI** technologies **help med reps enhance** their **productivity** by:

  1. **Analyzing** data **interactions** to understand the **needs** and **fields of interest** of each HCP and make **recommendations on** what **content** will have the most impact during the future calls

  2. **Optimizing message** and **channel sequencing** to engage HCPs with the right content and support

  3. **Automating administrative**[1] and **operational**[2] **tasks** with **CRM systems**[3] will help **maximize** the **time medical reps** can **spend preparing interactions** with HCPs or **interacting** with them

The relationship between pharma industry and patient advocacy groups is evolving and is reinforced by the development of digital communication tools

Marketing & Sales Patient Support

Patient support digitalization: PAGs relationships

Bristol Myers Squibb

GRYT HEALTH

Pharma companies & PAGs	Case study: BMS platform
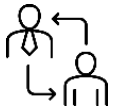
Pharma companies & PAGs

- Pharma companies often collaborate with PAGs but, historically, many of these relationships have been **transactional rather than strategic**

- Digital technology creates **new opportunities** for collaboration through **new communication channels**

- **Personalization** of **content** is an important strategic axis for communication with patients who search medical information **on blogs**, **forums** and **social networks**

- Search engine optimization is essential to gain visibility

- **Social listening**[1] **tools** gather real-life patient insights and strengthen their relationships

Case study: BMS platform

- **Bristol-Myers Squibb** and the digital health company **GRYT Health**[2] have partnered to develop **virtual Advocacy Exchange** to bring together patient advocacy groups, patients, HCPs and pharma companies, in the US

- The virtual platform will provide access to **educational content**, as well as the ability to **participate** in weekly **interactive live sessions**

- The objective is to **synchronize efforts**, facilitate the **sharing of resources** among stakeholders and **foster** increased **collaboration**

Podcasts are innovative and fast-growing medical communication formats for patients and healthcare professionals, recently used by Pfizer

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Patient support digitalization: Podcasts

Podcast format	Pfizer: "Science will win"
■ Podcasts are **100% audio format** to be listened to on demand, the consumption of which is **growing exponentially**	■ Since 2021, **Pfizer** has been offering a **series of podcasts** such as **"Science will win"**, a four-part **miniseries** exploring the **science behind gene therapy**
■ The **health crisis** has particularly **raised** the profile of **podcasts** dealing **with health issues**	■ Through **conversations** with scientists, experts, patient advocates and, most importantly, patients themselves…
■ Podcasts can be **created by expert patients**, **patient advocacy groups**, **healthcare professionals** or **pharma companies**	■ …each miniseries **focuses on** policy challenges and potential to transform **patients' lives by innovation**
■ Content focuses on **raising awareness** of a pathology or **sharing scientific content**	■ The podcast is **hosted by** Adam Rutherford, a **geneticist**, writer, broadcaster **from** the **University College London**

Sources: Podcasts: Expert & Patient Stories (Pfizer website) – Smart Pharma Consulting analyses

With the arising of Big Data, the communication ways of pharma companies using KOLs is shifting to the use of Digital Opinion Influencers on social media

Marketing & Sales Patient Support

## Case study: Big Data to identify Digital Opinion Influencers (DOI)

Context	Big Data development	Opportunity

▪ Today, pharma companies leverage the **influence of KOLs** – expert physicians and researchers – to conduct projects and increase their drug influence at all levels
 	
▪ Pharma companies select KOLs based on **two metrics**:
   – Publication of articles/studies
   – Number of prescriptions for a given drug
 	
▪ The main problem with KOLs is that they are typically identified according to **outdated metrics** in todays **hyper-connected** world
	▪ Advancements in **data analytics** technologies allow pharma companies to **measure influence** in much more meaningful and valuable ways
	
	▪ Such a detailed analysis can help to learn more about the **extent of influence** a key influencer has
	
	▪ Additionally, pharma companies can dig deeper into the **quality of those relationships**
		▪ **HCPs** and **patients** are **acquiring information** about disease and treatment in the digital world
		
		▪ This creates an **opportunity** – **strategic DOI identification, outreach and management** – for brand, communications and medical teams **that is often overlooked** or **poorly addressed**
		
		▪ A well-planned and supported DOI program offers the **potential to amplify** those **efforts** by **disseminating** key messages **through digital channels**

The successful implementation of pharma companies' digital strategy requires to adapt its activities, structures, processes and change its culture

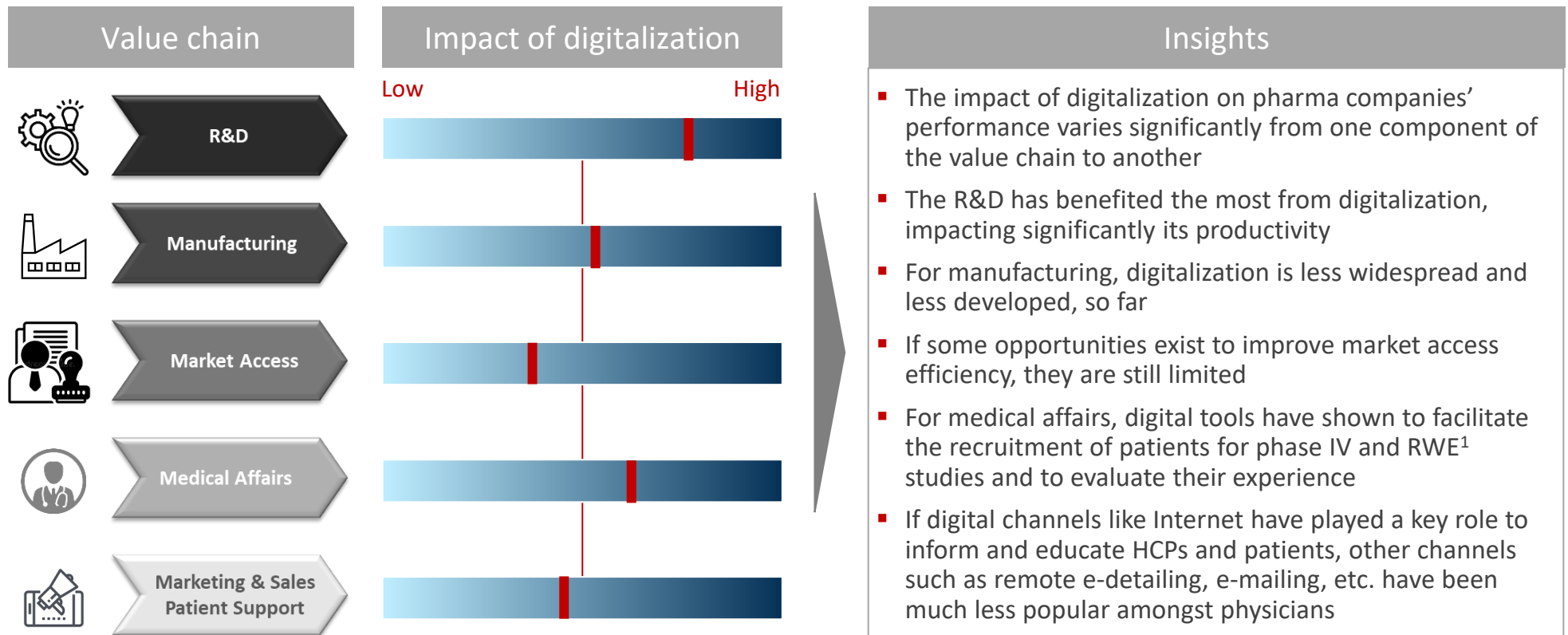## Digital transformation: landscape and organization impact
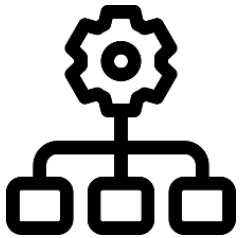
- **Pharma companies** have understood the challenge of fundamentally **changing** their **organization, talent and capabilities** to **embrace digital transformation** across the **value chain**, including the development of the Chief Digital Officer position

- **Data management** is an **important** activity to develop when implementing big data capabilities and, for so doing, it is necessary to:
  - Develop a **data governance plan**
  - Create **standards and business rules**
  - Comply with the **regulations**

- Access to big data and data management technologies (e.g., AI) are often acquired through **partnerships with GAFAM[1]** or start-ups
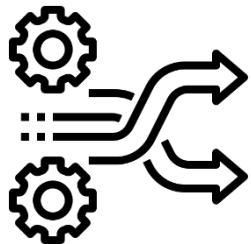
- Pharma companies need to put in place a **new structure** that facilitates **collaboration** and **distribution of resources** in order to avoid a **siloed organization**, an obstacle to digital development

- **Once** big data and AI **technologies** are **in place**, pharma companies must **build** a **data driven culture** that drives tangible business outcomes

- If it is important to **demonstrate** the **power of digitalization** by showing its value

- It is also essential that it **remains an enabling tool** and **not a substitute** for **decision-making**

- The **final decision** should be **in the hands of collaborators**

The question is not whether digitalization of pharma companies' value chain is essential, but how to best leverage digital technologies and innovations to boost business performance

Key takeaways

Value chain	Impact of digitalization	Insights

Value chain (top to bottom):
- R&D
- Manufacturing
- Market Access
- Medical Affairs
- Marketing & Sales Patient Support

Impact of digitalization: Low ——— High

Insights:

- The impact of digitalization on pharma companies' performance varies significantly from one component of the value chain to another

- The R&D has benefited the most from digitalization, impacting significantly its productivity

- For manufacturing, digitalization is less widespread and less developed, so far

- If some opportunities exist to improve market access efficiency, they are still limited

- For medical affairs, digital tools have shown to facilitate the recruitment of patients for phase IV and RWE[1] studies and to evaluate their experience

- If digital channels like Internet have played a key role to inform and educate HCPs and patients, other channels such as remote e-detailing, e-mailing, etc. have been much less popular amongst physicians

Sources: Smart Pharma Consulting analyses

[1] Real-world-evidence

Smart Pharma

CONSULTING

Consulting firm dedicated to the pharmaceutical sector operating
in the complementary domains of strategy, management and organization

The best-in-class Series

- This series intends to share concepts, methods and tools to boost the efficiency and efficacy of executives having operational responsibilities in the pharma business

- We have yet published several issues including:
  – Operational functions (e.g., marketer, med rep, MSL, KAM)
  – Operational activities (e.g., Market research, BD&L, strategy crafting, reputation enhancement, field force organization)

Digitalization of the Value Chain

Application to pharma companies

The key issue regarding pharma companies' digitalization is to find how to integrate digital tools and technologies in business operations in an efficient manner

This position paper highlights the importance of digitalization along the components of pharma companies' value chain to:

- Increase R&D productivity

- Improve manufacturing flexibility

- Develop convincing market access models

- Optimize medico-marketing and sales interactions with customers, and especially HCPs and patients

Smart Pharma Consulting Editions

- Besides our consulting activities which take 85% of our time, we are strongly engaged in sharing our knowledge and thoughts through:
  – Our teaching activities in advanced masters (ESSEC B-school, Paris Faculty of Pharmacy)
  – Training activities for pharma executives
  – The publication of articles, booklets, books and expert reports

- Our publications can be downloaded from our website:
  – 41 articles
  – 61 position papers covering the following topics:
    1. Market Insights
    2. Strategy
    3. Market Access
    4. Medical Affairs
    5. Marketing
    6. Sales Force Effectiveness
    7. Management & Trainings

- Our research activities in pharma business management and our consulting activities have shown to be highly synergistic

- We remain at your disposal to carry out consulting projects or training seminars to help you improve your operations

Best regards

Jean-Michel Peny