ADDED VALUE WITH AI SWISS MADE

INTRODUCTION TO

NEW TYPE OF HUMAN BRAIN-LIKE INTELLIGENCE

DELIVERED BY INFOCODEX

AGENDA

- AI Market Status
- Approach InfoCodex
- Value Drivers of InfoCodex
- References
- Recommended Approach

ARTIFICIAL INTELLIGENCE SOFTWARE MARKET REVENUE WORLDWIDE 2018-2025

- “The global artificial intelligence (AI) software market is forecast to grow rapidly in the coming years, reaching around 126 billion U.S. dollars by 2025. The overall AI market includes a wide array of applications such as natural language processing, robotic process automation, and machine learning.”

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Source statista: Published by Shanhong Liu/Research expert global software industry - Sep 10, 2021

THE COVID PANDEMIC AS A LITMUS TEST FOR THE MATURITY OF ARTIFICIAL INTELLIGENCE

- “Generally, respondents from companies that have adopted more AI capabilities are more likely to report seeing AI models misperform amid the COVID-19 pandemic than others are.”

Mc Kinsey‘s Global Survey on AI 2020 - November 17, 2020 | Survey

“The holy grail of having unstructured machine learning go into big clinical data lakes and then suddenly finding new insights – we’ve not been able to crack…”

Vas Narasinham, CEO Novartis, 2020

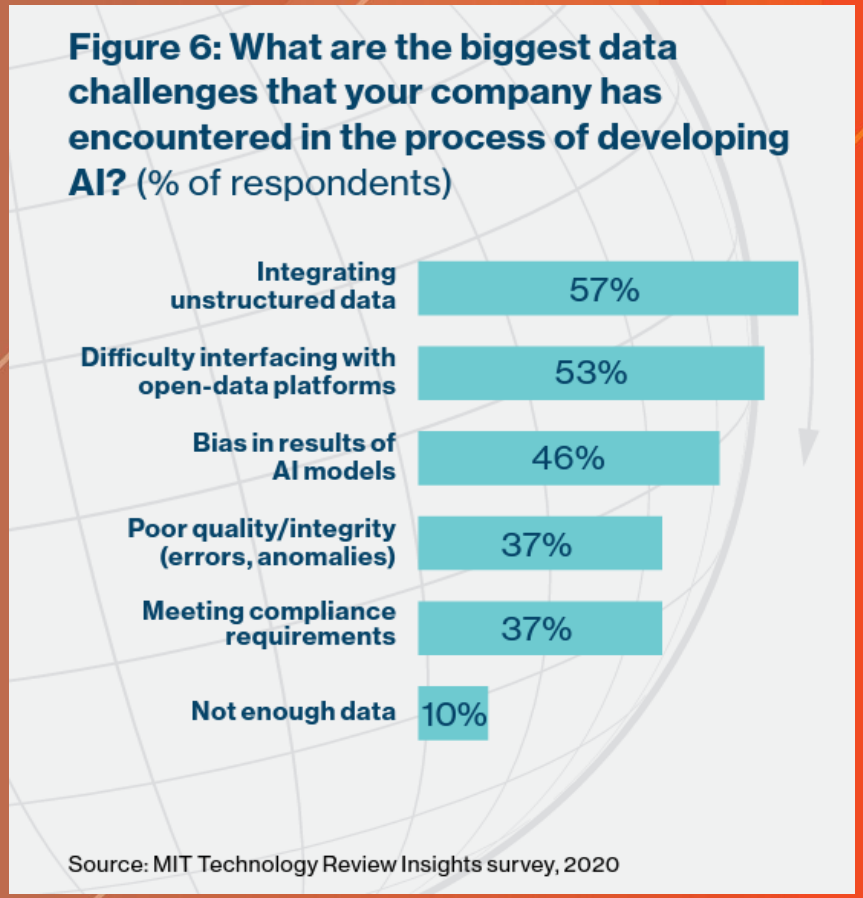
“Hundreds of AI tools have been built to catch covid. None of them helped.

The clear consensus was that AI tools had made little, if any, impact in the fight against covid.

Source: MIT Technology Review July 30, 2021

ARE THE MARKET LEADERS IN AI SOLUTIONS AT AN IMPASSE?

- Big Players using NLP & pattern recognition approach for the solutions available in the markets
  - Four major issues remaining:
    - Integration of free text
    - Integration of free text sources
    - Bias in results due to human preparation
    - Identification of ‘unknown’ relations
- Immense investments of the last decade prevent a fundamental change of direction



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INFOCODEX – HIDDEN CHAMPION FOR HUMAN LIKE AI ?

DR. PAUL WÄLTI,
CHIEF EXECUTIVE OFFICER

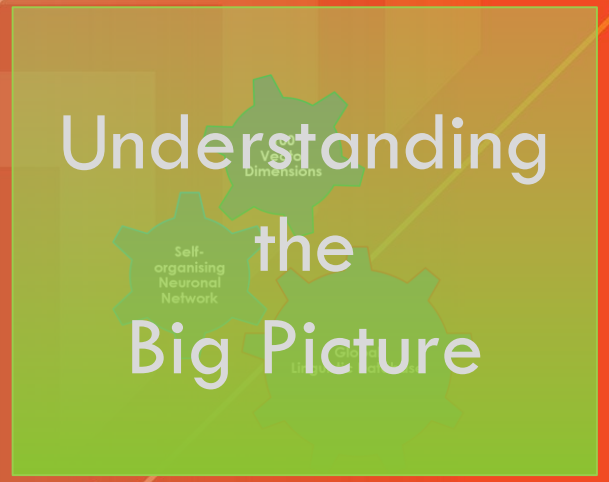
- Spezialist für Datenintegration, Daten-Aggregation und statistischen Analysen, einschliesslich klinischer Studien; leitende Positionen bei General Atomic, Hilti, Roche
- Mitgründer der InfoCodex AG in 2002

DR. CARLO A. TRUGENBERGER,
CHIEF SCIENTIFIC OFFICER

- Forschungsaufgaben am CERN, MIT, Max Planck Institut; ein Experte für neuronale Netzwerktechnologie und „computational linguistics“
- Mitgründer der InfoCodex AG in 2002

INFOCODEX – HIDDEN CHAMPION IN ‚HUMAN-LIKE AI‘

- Focus on Value Creation vs IT-technical competencies of customer
- Relevant knowledge available in universal linguistic database
- Allows industry-specific and cross-industry problem solutions
- Multilingualism allows cross-language knowledge provision
- InfoCodex does not need a learning & training phase



International Classification for Standards (ICS)

WordNet/Princeton University
AGROVOC
EuroVoc
Jurivoc

Subject-specific Thessauri
DIN
Insurance Industry
Banking&Finance
HealthCare/ Bio-Technology/Pharmacy
Govermental etc.

INFOCODEX - THE NEXT GENERATION AI-SOLUTION FOR UNSTRUCTURED INFORMATION

UNIVERSAL LINGUISTIC DATABASE

- machine-readable knowledge repository, > 4 mio. terms
- world's largest thesaurus
- based on the wordnet of the Princeton University + 100 additional renowned information sources, incl. bio-medical data
- cross-lingual (DE,EN,FR,IT,ES)
- covers human knowledge

SELF ORGANIZED NEURONAL NETWORK

- imitation of the function of the human brain (intelligence, Kohonen approach)
- combines arftificial Intelligence (AI) with the linguistics and the mathematical statistics
- coarse-mesh rebalancing to accelerate the network constr.

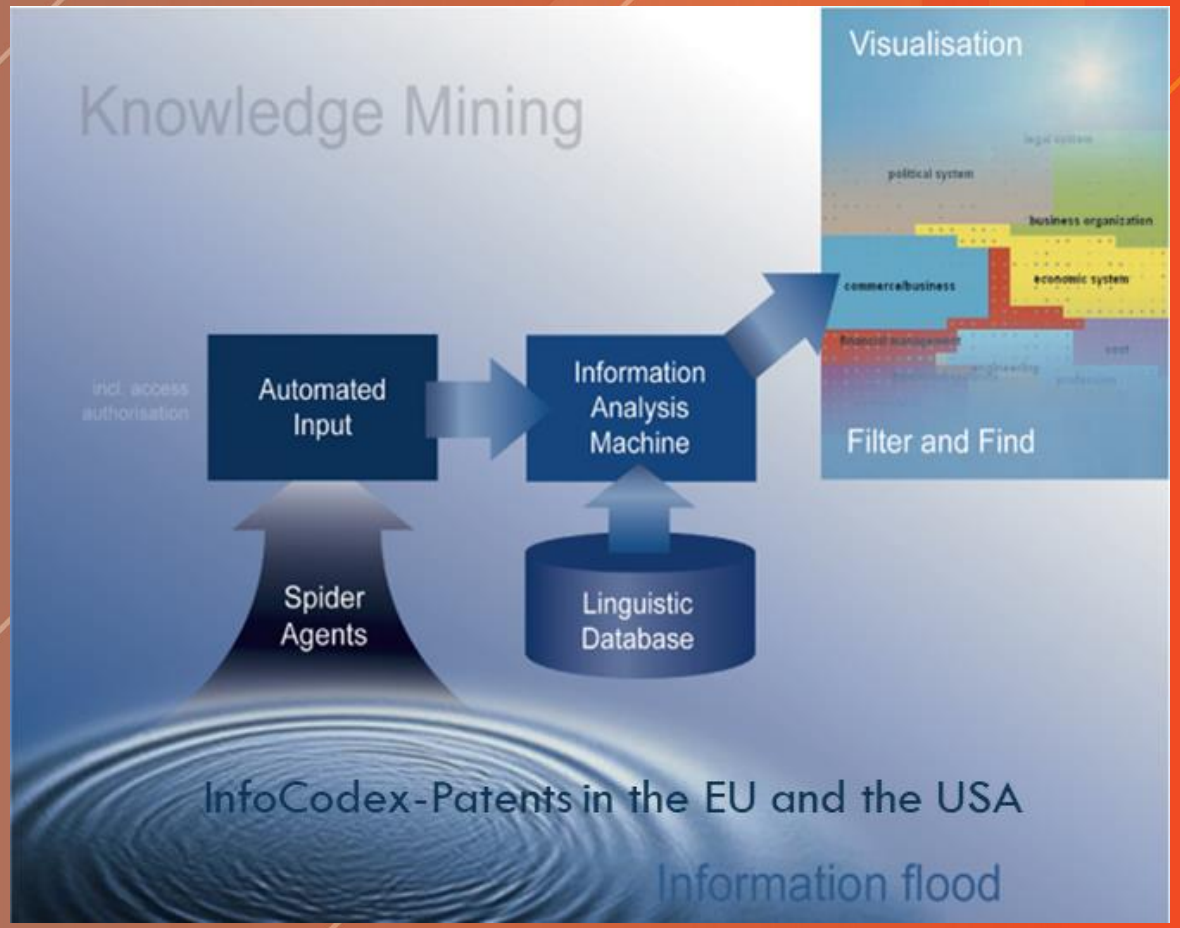
ADVANCED STATISTICAL ANALYSIS

- projection of the word meanings onto 100-dimensional content space
- handles entropies and weightings
- find hidden correlations of unnoticed facts to disover unknown relationships

ASSET DEVELOPED >100 PERSON YEARS USING VERY SENIOR EXPERTS

TECHNICAL OVERVIEW AND ARCHITECTURAL COMPONENTS

- Unique Linguistic Database linked to a universal Taxonomy (4 Mio items)
- Linguistic and statistical methods
- Using neural networks
- Multiple Sources to be integrated:
  - Websites
  - Internet Databases
  - Search Engine Requests
  - RSS feeds
  - File servers
  - E-Mails
  - Sharepoint

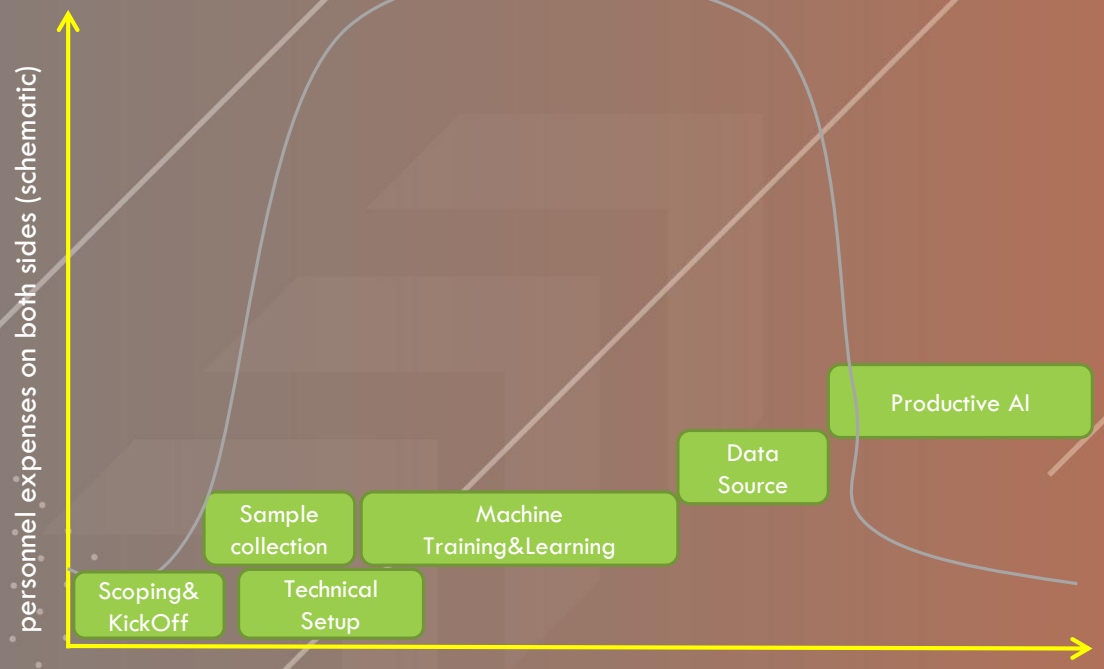


TECHNICAL BACKGROUND: SOURCES & INTERFACES

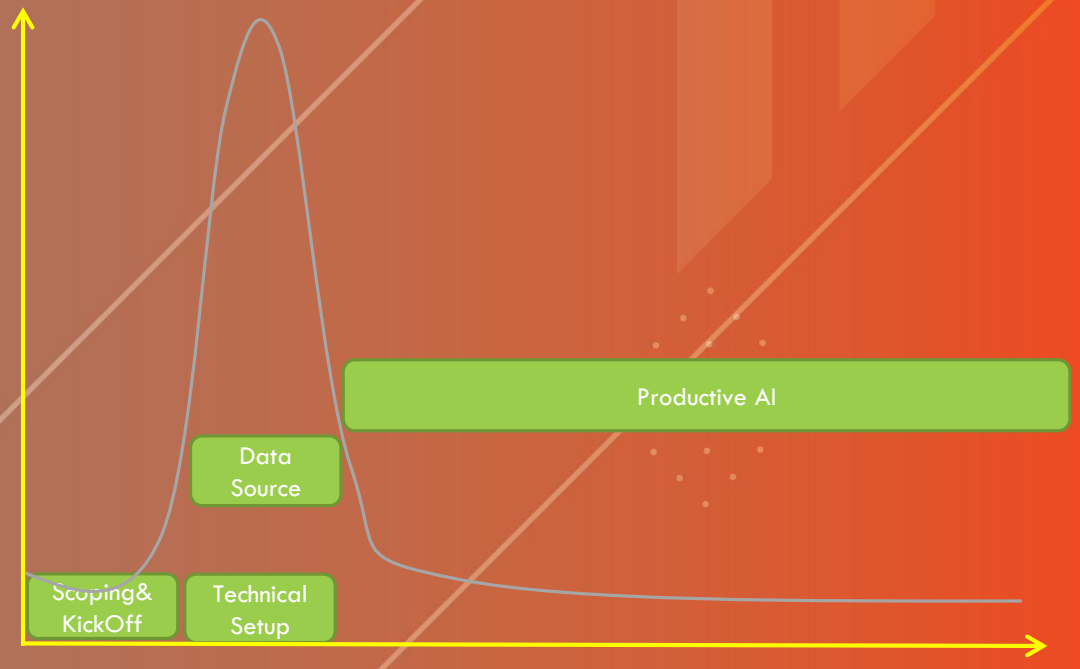
- File Server and Web
  - Common document formats such as MS Word, PDF, Excel, PPT presentations, PostScript, RTF, TXT, HTML, XML, RSS, MSG, EML (in original or zipped form); other file formats for which an i-Filter is available
- Mailboxes
  - Outlook, Outlook Express, Thunderbird, Exchange Server, IBM Lotus Notes (including attachments of e-mails in original or zipped format)
- MS SharePoint
  - Standard interface available
- DBMS/DMS
  - Individual connectors required (e.g. using ODBC)

INFOCODEX AI SOLUTION DIFFERENTIATES IN ADDING VALUE THROUGH KNOWLEDGE STRUCTURES AND HUMAN-LIKE INTELLIGENCE

- Classical AI Approach



- Knowledge-based semantics IC



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INFOCODEX ERZEUGT MEHRWERT MIT IMMANENTEN FÄHIGKEITEN OHNE TRAININGSAUFWAND AUS VIELFALT VON QUELLEN

- „VERSTEHT" Thematischen Inhalt über die Sprachbarrieren hinweg
- „ORGANISIERT“ Kategorisiert und ordnet Dokumente nach ihrem Inhalt
- „IDENTIFIZIERT“ Schlüsselwörter aus Sicht der inhaltlichen Relevanz
- „GENERIERT“ Inhaltlich korrekte Zusammenfassungen
- „PAKETIERT“ Bündelt ähnliche Dokumente ohne Informationsverlust
- „ENTDECKT“ Dokumente anhand von Text in natürlicher Sprache
- „ERKENNT“ Bisher nicht bekannte Zusammenhänge in allen Branchen

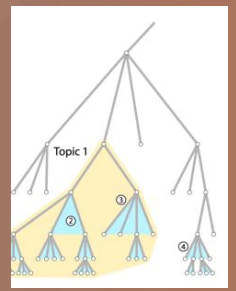
ADDED VALUE OF INFOCODEX INTELLIGENCE (SELECTION)

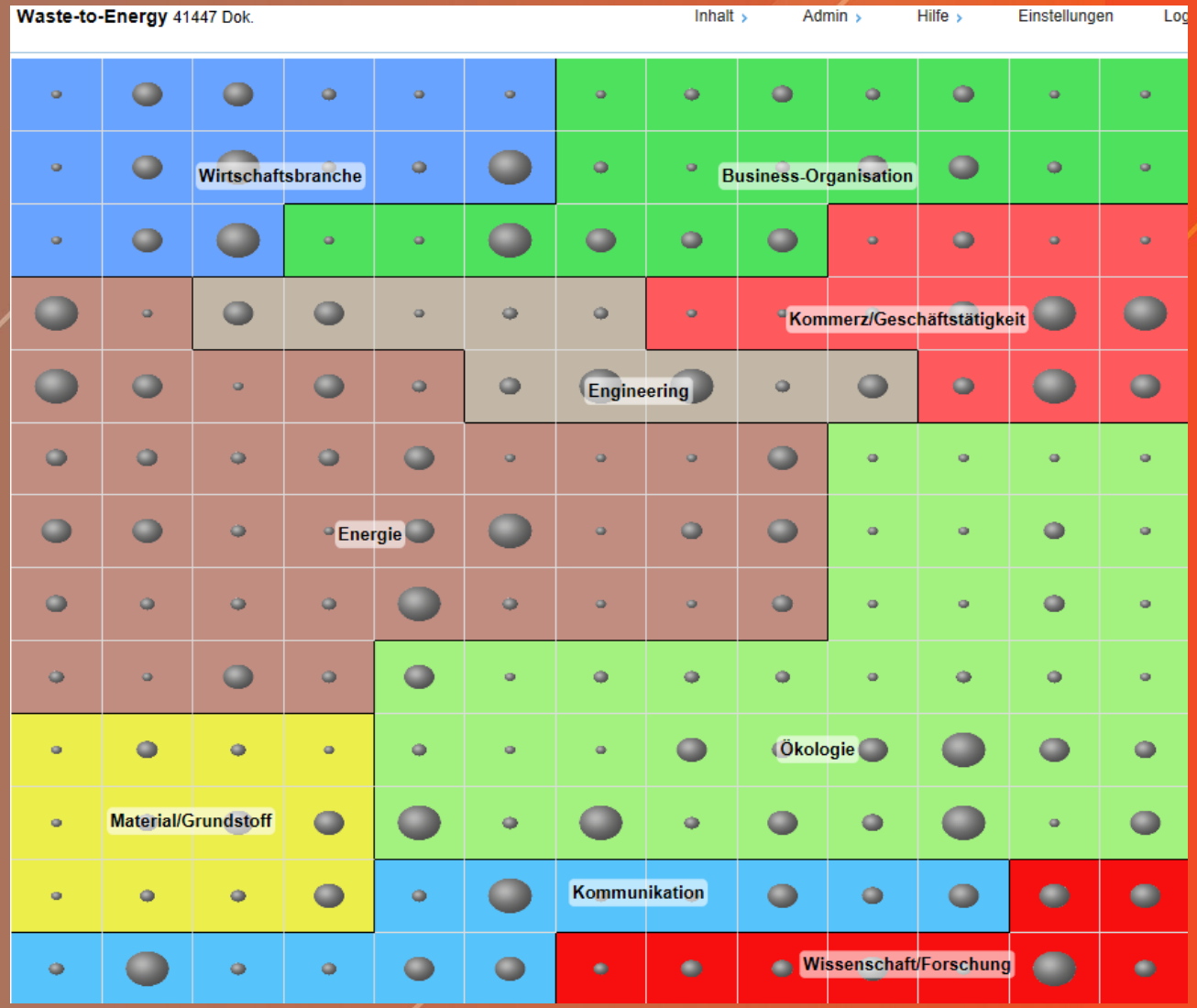
	Use Cases	Added Value for User
1	Knowledge Management	Organize your unstructure data and transform into reuseable knowledge
2	Knowledge Transfer	Learn from others in the unstructured knowledge repertoire (‚Don‘t re-invent the wheel‘)
3	Automatic Bookshelf	Automatically categorise documents from different sources and allow efficient information retrieval (logical bookshelf/automatic or customer-specific class terms)
4	Text Summaries	Automatically providing abstracts of domuments and/or books
5	Market Intelligence	Daily market analysis of business areas, products and competitors
6	Sentiment Analysis&Report	Analysis of feedback from employees or customers and their grouping into evaluation classes (visual heat map with positive/negative focal points)
7	Response Management	Capable of ad hoc feedback reaction to unstructured client information
8	Profile Matching	Cross-language comparison of text content independent of predefined key terms/term
9	Knowledge Discovery	Explore unknown relations and thus identify new opportunities and new risks

BEISPIEL: BOOKSHELF APP

- BookShelfApp unterstützt das Clustern von Dokumenten entsprechend dem Inhalt
- Zeigt grafisch die Schwerpunkte bezüglich des Inhalts
- Erkennt Signifikanz von Begriffen und Inhalten
- Ermöglicht Zugang zum jeweiligen Detail

- Anwendungsmöglichkeiten
  - Housekeeping
  - Restructuring
  - Etc.





TASTE IT- WWW.IC-SUMMARY.COM

- Ein sehr einfaches Beispiel:
  - Ein Newsreader liest kontinuierlich die URLs aus den RSS-Feeds ausgewählter Zeitungen oder anderer Informationsquellen
  - Für jeden Artikel der durch diese URLs identifiziert wird, wird automatisch eine Zusammenfassung erstellt. Diese wird ergänzt durch das Thema, die wichtigsten Schlüsselwörter und das repräsentativste Bild.
- Zweck des Demo-Beispiels "News-Reader-Liste mit automatisch zusammengefassten Artikeln"
  - Zeigt einige wesentliche Eigenschaften/USPs von InfoCodex auf einfache Art und Weise :
  - Automatisches Verstehen des Inhalts → Zusammenfassung in hoher Qualität
  - Automatische Generierung von standardisierten Schlagworten → ermöglicht Tagging für Web 3.0 (Semantisches Web)
  - Bestimmung des Hauptthemas, zu dem ein Artikel gehört → thematische Kategorisierung von Artikeln (z.B. für Profilabgleich)
  - Wirklich sprachübergreifend

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SELECTION OF REFERENCES

- Customer and - Application/Scope
- ABB, Baden (CH) Market Intelligence
- Adcubum, St. Gallen (CH) Categorization and sentiment analysis of customer feedback
- Amberg Group, Regensdorf (CH) Enterprise Information Management
- Ammann Group, Langenthal (CH) Market Intelligence
- Escatec, Altstätten (CH) Market Intelligence
- Ebicon (Filiale von Eberhard, Kloten) (CH) Market Intelligence
- GEBERIT, Rapperswil-Jona (CH) Enterprise Management

InfoCodex has developed a computer program that automatically analyses medical literature for overlooked information. In a recent test, it sought new biomarkers – biological measures such as indicators in the blood – for diabetes and obesity by scanning 120,000 published academic papers and internal documents at Merck. Financial Times April 5, 2013

- SCHWARZ Personal (FL) HR Matching
- Merck & Co., Kenilworth NJ (USA) Discovery of Novel Biomarkers
- PwC, Zürich (CH) - Market intelligence/ market observation - Knowledge discovery (forensics)
- Remintrex, Berlin (D) Real-time categorization of Web-pages into an advertisement taxonomy
- Sanofi Paris (F) Categorization and clean-up of masses of documents (PoC)
- Swiss Life, Zürich (CH) Market intelligence/ market observation/ knowledge hubs

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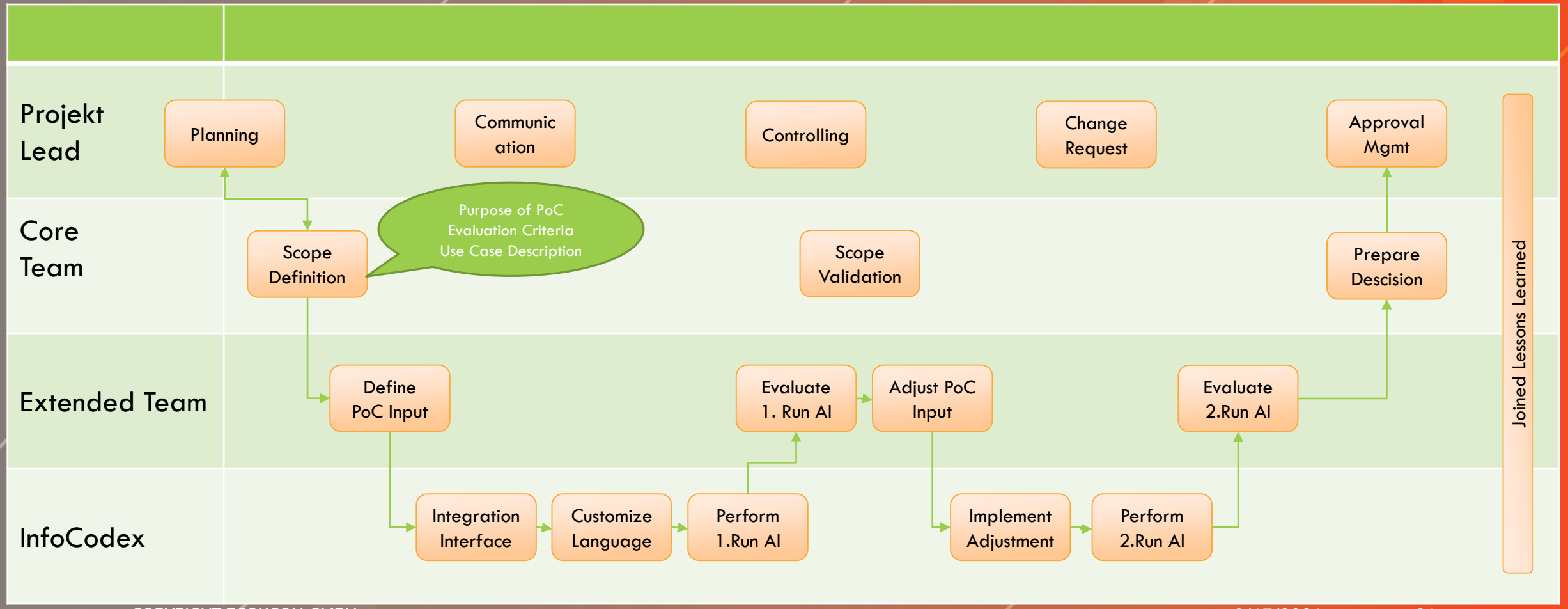
POC TO VALIDATE INFOCODEX'S VALUE FOR THE INDIVIDUAL CUSTOMER USE CASE



THE DIFFERENT POSSIBILITIES IN THE BUSINESS MODEL BETWEEN INFOCODEX AND THE CUSTOMER

Potential Collaboration	Description	Contract between Customer and InfoCodex
InfoCodex as a Service	Continuous Service base on special service contract without enterprise integration	Initial project cost plus continuous Service Fee
InfoCodex in premise	Project to implement and integrate InfoCodex in the customer‘s environment based on welldefined use case	Initial project cost, one time license fee and ongoing maintenance fee
InfoCodex as AI-Tool	Project to implement and integrate InfoCodex and enable the customer to establish new use cases and integration	Enabling project cost, one time license fee and ongoing maintenance fee
InfoCodex as Product (White Labelled)	Enable the customer to establish use cases including integration and provide reselling capability	Individual contract für reselling

TASTE IT- WWW.IC-SUMMARY.COM

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  - Bestimmung des Hauptthemas, zu dem ein Artikel gehört → thematische Kategorisierung von Artikeln (z.B. für Profilabgleich)
  - Wirklich sprachübergreifend

WIR STEHEN GERNE ZUR IHRER VERFÜGUNG

Ihr Kontakt:

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  – Excellence in Connecting Ecosystems -
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- Mobil:+49 (0) 160 987 34400
- info@ecoXcon.com
- www.ecoXcon.com

Info zu InfoCodex:

- Inhalt und Bilder verantwortet/freigegeben durch:
- InfoCodex AG Semantic Technologies
- Bahnhofstrasse 50
- CH-9470 Buchs SG, Schweiz

NICHT IM STANDARD FOLIENSATZ

COMPETITION (BACKUP)

- „IBM gives up on finding new biomarkers with Watson“

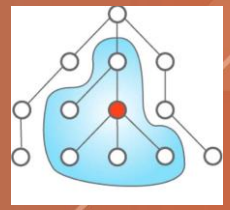
Source: Financial Times myFT (2019)

- „How IBM Watson Overpromised and Underdelivered on AI Health Care“

Source: IEEE Spectrum (2019)

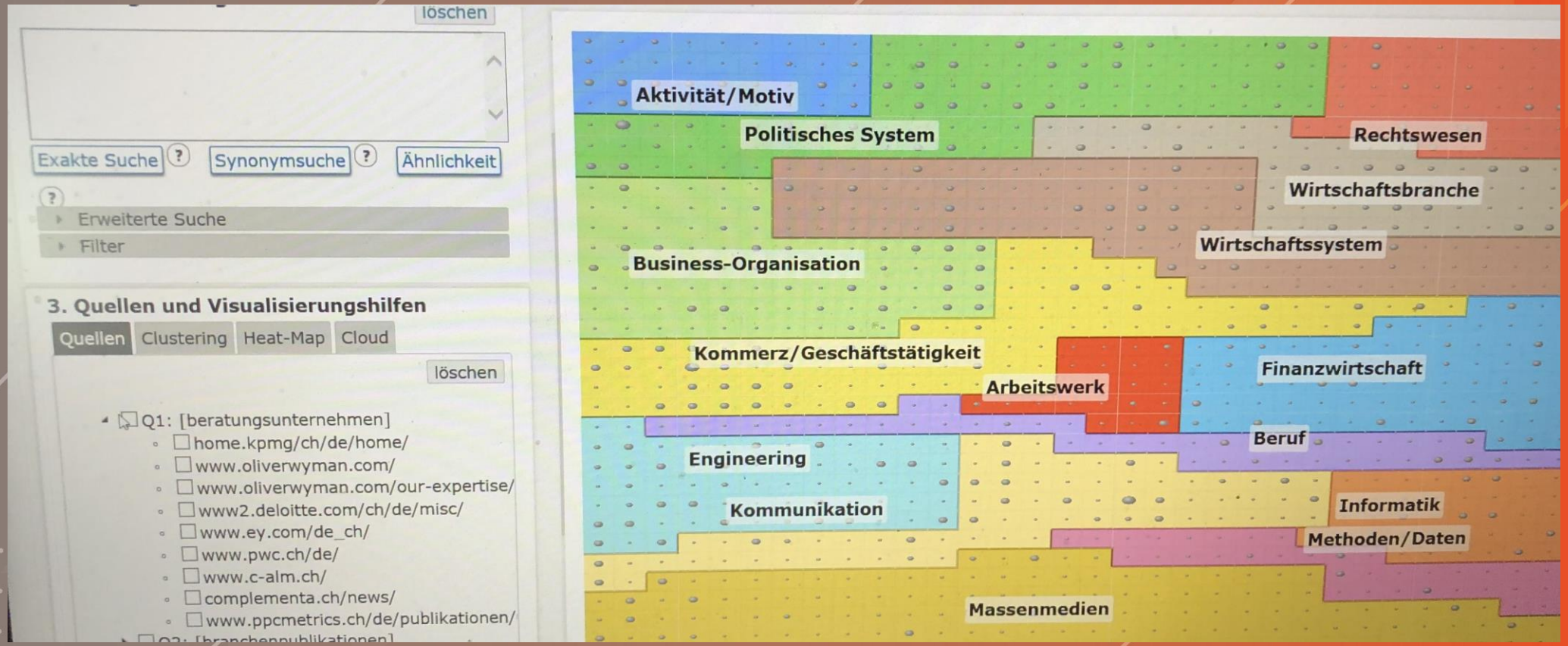
THE EXPERIMENT OF MERCK&CO. TO DISCOVER NEW BIOMARKERS FOR DIABETES WITH INFOCODEX

- Step 1: Establish Reference Models for Biomarkers (Document analysis & grouping)
- Step 2: Determine the Meaning of Unknown Words
- Step 3: Construct Potential Biomarkers



A	B	C
Unknown term	**Constructed hypernym**	**Associated descriptor 1**
Nn1250	clinical study	insulin glargine
Tolterodine	cavity	overactive bladder
Ranibizumab	drug	macular edema
Nn5401	clinical study	insulin aspart
Duloxetine	antidepressant	personal physician
Endocannabinoid	receptor	enzyme
Becaplermin	pathology	ulcer
Candesartan	cardiovascular disease	high blood pressure
Srt2104	medicine	placebo
Olmesartan	cardiovascular medicine	amlodipine
Hctz	diuretic drug	hydrochlorothiazide
Eslicarbazepine	anti nervous	Zebinix
Zonisamide	anti nervous	Topiramate Capsules
Mk0431	antidiabetic	sitagliptin
Ziprasidone	tranquilizer	major tranquilizer
Psicofarmcologia	motivation	incentive
Medoxomil	cardiovascular medicine	amlodipine

	A	B	C	D	E	F	
1	Part "Biomarkers" from Pubmed with confidence level > 5%; 100% refers to biomarkers of the reference set						
2							
3	Term	Relationship	Object	Target	Conf %	N.Do	PMIDs
4							
5	Human equilibrative nucleoside transporter-3	BiomarkerFor	Diabetes		100.0	2	20595384, 20032083
6	Human equilibrative nucleoside transporter-3	SynonymOf	hENT3				
7	microRNA	BiomarkerFor	Diabetes		100.0	44	20857148, 21118127, 21335216, 20015039, 20358579, 20364159, 21261648
8	microRNA	BiomarkerFor	Diabetes	FABP_4_aP2	100.0	1	20486779
9	microRNA	BiomarkerFor	Obesity		26.1	58	21355787, 19650761, 21152117, 21118127, 21118894, 20886002, 19188425
10	microRNA	BiomarkerFor	Obesity	FABP_4_aP2	26.1	4	19460359, 18809385, 21291493, 20486779
11	microRNA	BiomarkerFor	Obesity	GPR74	26.1	1	21036322
12	microRNA	BiomarkerFor	Obesity	AMPK	26.1	1	16459310
13	microRNA	SynonymOf	micro-RNA				
14	microRNA	SynonymOf	micro ribonucleic acid				
15	microRNA	SynonymOf	miRNA				
16	microRNA	SynonymOf	miRNA based				
17	microRNA	SynonymOf	MIR126 gene				
18	microRNA	SynonymOf	MiR-126				
19	potassium inwardly-rectifying	BiomarkerFor	Diabetes		100.0	50	20042013, 20194712, 20368737, 20401705, 20531501, 20546293, 20863361
20	potassium inwardly-rectifying	BiomarkerFor	Diabetes	FTO	100.0	8	18597214, 19020324, 18984664, 20503258, 18598350, 20142250, 18710364
21	potassium inwardly-rectifying	BiomarkerFor	Obesity		21.0	24	20049090, 20307313, 18598350, 18710364, 20712903, 18498634, 21391351
22	potassium inwardly-rectifying	BiomarkerFor	Obesity	FTO	21.0	4	20049090, 18598350, 18710364, 20929593
23	potassium inwardly-rectifying	SynonymOf	KCNJ11				
24	potassium inwardly-rectifying	SynonymOf	Kir6.2 gene				


löschen
Exakte Suche
Synonymsuche
Ähnlichkeit
Erweiterte Suche
Filter
3. Quellen und Visualisierungshilfen
Quellen
Clustering
Heat-Map
Cloud
löschen
Q1: [beratungsunternehmen]
home.kpmg/ch/de/home/
www.oliverwyman.com/
www.oliverwyman.com/our-expertise/
www2.deloitte.com/ch/de/misc/
www.ey.com/de_ch/
www.pwc.ch/de/
www.c-alm.ch/
complementa.ch/news/
www.ppcmetrics.ch/de/publikationen/
Aktivität/Motiv
Politisches System
Rechtswesen
Wirtschaftsbranche
Wirtschaftssystem
Business-Organisation
Kommerz/Geschäftstätigkeit
Arbeitswerk
Finanzwirtschaft
Beruf
Engineering
Kommunikation
Informatik
Methoden/Daten
Massenmedien

INFOCODEX – HIDDEN CHAMPION IN ‚HUMAN-LIKE AI‘

- Fokus der Lösung setzt auf ‚Value Creation‘ des Anwenders
- Relevantes Wissen in universeller linguistischen Datenbank verfügbar
- Branchenspezifische und –übergreifende Problemlösungen möglich
- Mehrsprachigkeit erlaubt sprachenübergreifende Wissensbereitstellung
- InfoCodex braucht keine Einlernphase (self-learning)

International Classification for Standards (ICS)

WordNet/Princeton University
AGROVOC
EuroVoc
Jurivoc

Subject-specific Thessauri
DIN
Insurance Industry
Banking&Finance
HealthCare/ Bio-Technology/Pharmacy
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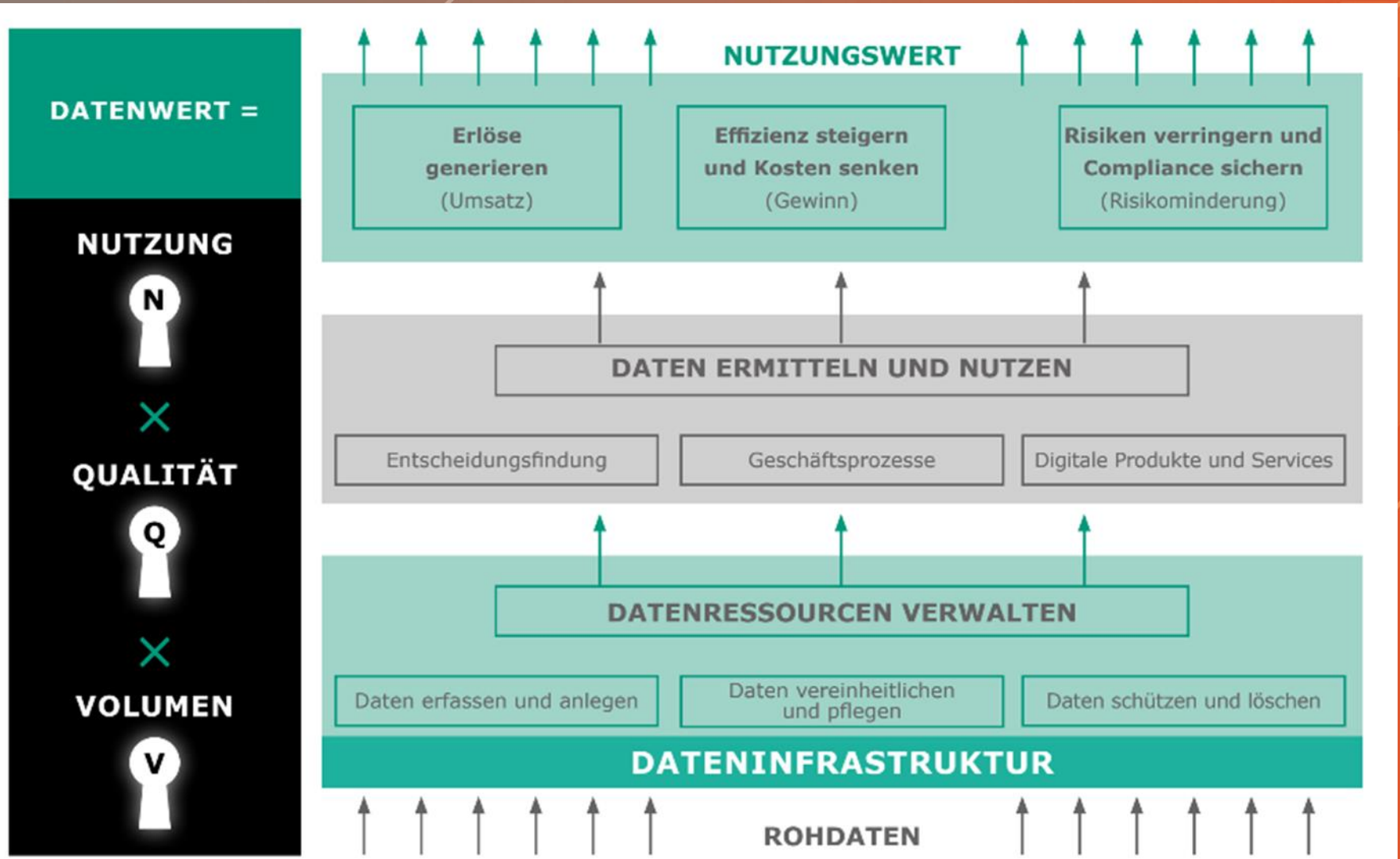

Abbildung 2: Datenwertschöpfungskette

Quelle: Die Datenwert der Universität Lausanne UNIL