

MCG

THE PRECISION MOTION ANALYSIS COMPANY

Motion Biomarker in Digital Care

– Making the most of personalized motion data –

Bio€quity – 21ST May, 2019 / Barcelona

EXECUTIVE SUMMARY



Motion Capture Group is a precision motion analysis & digital care company

focused on improving motion-related conditions and diseases,
using its proprietary, high-quality wearables, vast data sets & advanced analytics.

Founded

2017 by seasoned healthcare executives – e.g.

Hartmut Voss

ex-Dieveni, Molecular Health, Novaliq, LION bioscience

Michael Weber

ex-Bridges Consulting, IIC Industrial Investment Council, bbv Leipzig

Harald Fricke

ex-Apogenix, Fresenius, Baxter, SmithKline Beecham

Backed

by top-tier advisors & key opinion leaders (KOL) – e.g.

Dr. Thilo Weichert

Expert European Data Protection Laws

Prof. Dr. Petra Platen

Expert Sports Medicine

Margaret Heckel

Expert Public Affairs

Catalin Voss

Expert Artificial Intelligence – Stanford Alumni

USP

Unlike most competitors, **MCG combines expertise** in operating clinical trials,
regulated high-quality medical devices, ML/AI knowledge in big health data
integration & analysis for decision support.

MARKET NEED

Need & Opportunity

Musculoskeletal & motion-related diseases are among the TOP 4 cost-drivers worldwide in healthcare spending.
Germany \$ 45bn / US \$ 220bn

Problem

Available solutions have at least **one or more shortcomings** – e.g.

- × **high cost** of goods,
- × **inability to track dynamic motion** for a longer period of time under real-life conditions,
- × **lack of medical device-grade quality** if applied outside the laboratory,
- × **lack of** sophisticated & secure **ML/AI big data analysis**.

Solution

Next-generation **medical device wearables for precision motion ML/AI analysis**.
Supported by sophisticated Bio-IT infrastructure for **diagnosis, monitoring, decision support & digital guided care**.

Advantage

Dynamic motion analysis of physiologic signals & time series reveals so far **undetected aspects of health / disease** and/or **aging**.
Gathered data provides **insights into the biological process** and is key for **developing new motion biomarkers** by **measuring parameters of normal human physiology & disease**.

MARKET SEGMENTS

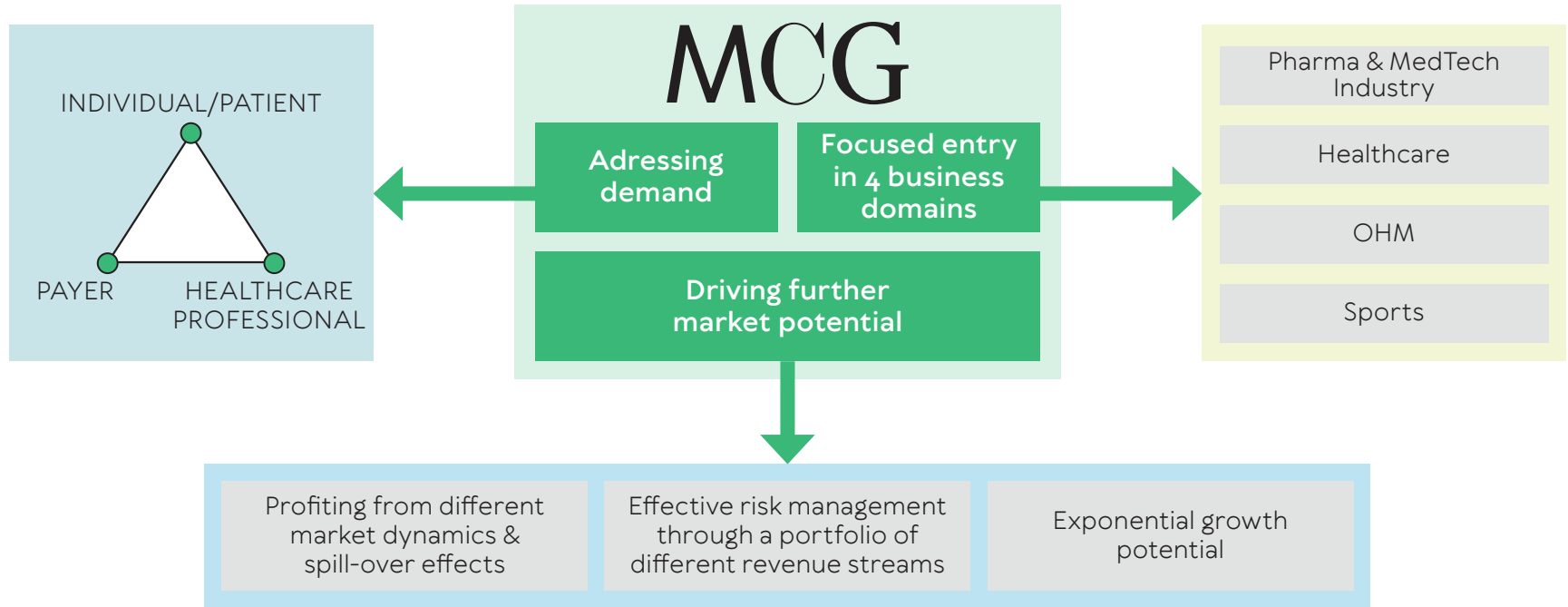
Go-to-Market

- **Pharma & Medtech:** Motion Biomarker in clinical trials
Opportunity: EU & USA \$ 150mio
- **Health:** TEP post-surgery rehab management, diabetic foot ulcers, neurodegenerative disorders, orthopedic indications
Opportunity: Germany \$ 1.5bn / US \$ 5bn
- **Occupational Health Management** (OHM): Truck-, train-, bus drivers
Opportunity: Germany \$ 750mio / US \$ 1.4bn
- **Sport:** Marathon & Golf
Opportunity: Worldwide \$ 2bn

Value Propositions

- ✓ **Diagnosis** of condition or disease
- ✓ **Monitoring** of condition, disease or treatment
- ✓ **Individual** health information
- ✓ **On demand** healthcare services
- ✓ **R&D Catalyst**
- ✓ **Sports Performance optimisation & injury prevention**

BUSINESS MODEL MCG



WHAT WE DO

MEASURE



We capture motion and posture with **two wearables** in medical grade, gold standard quality.



ANALYSE



We analyze the data with **ML/AI**, compare with reference data set & perform a decision support solution. Our software will be a medical device.



TRANSLATE



We create personalized **motion biomarker** & deduce multimodal **digital care solutions** for prevention, diagnosis and therapy monitoring.



BENEFIT



Thereby, we **support individual health, effectiveness, quality assurance & cost efficiency** in the health system.

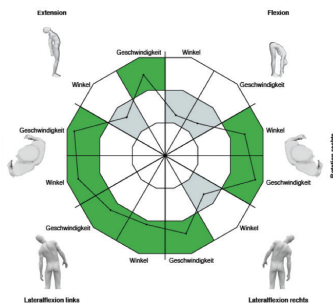
TWO WEARABLE SENSOR TYPES SPINE & INSOLE

EPIONICS

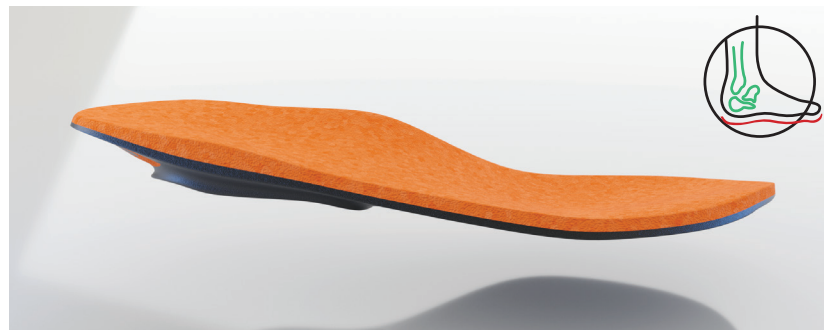


Epionics Sensor V2.0

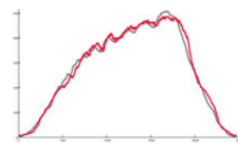
- Based on approved Epionics spine sensor (current gold standard)
- Comfortable to wear
- Objective data
- Dynamic, high resolution
- Extension, flexion, rotation
- Range of motion and speed
- Long term measure (up to 5 days)
- Variable detection rate
- Body symmetry



SenMotion



SenMotion Insole Sensor



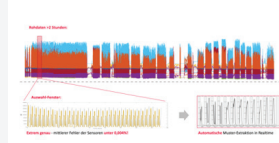
Insole vs. gold standard

- Insole (every day life)
- Ground force plate (lab)



Symmetry (e.g. Stroke)

- Affected side
- Non-affected side



Longitudinal data

- Several hours
- run – stand – run

MCG CLOUD PLATFORM



VISION

Providing a secure, scalable & robust IT infrastructure to explore, develop & apply sensor based medicine health.



Data Capturing

- Multi-channel sensor data acquisition
- Offline caching of captured data
- Involvement of health/vital parameters tracked by mobile devices
- Secure data transfer & cloud storage

Analytics & Decision Support

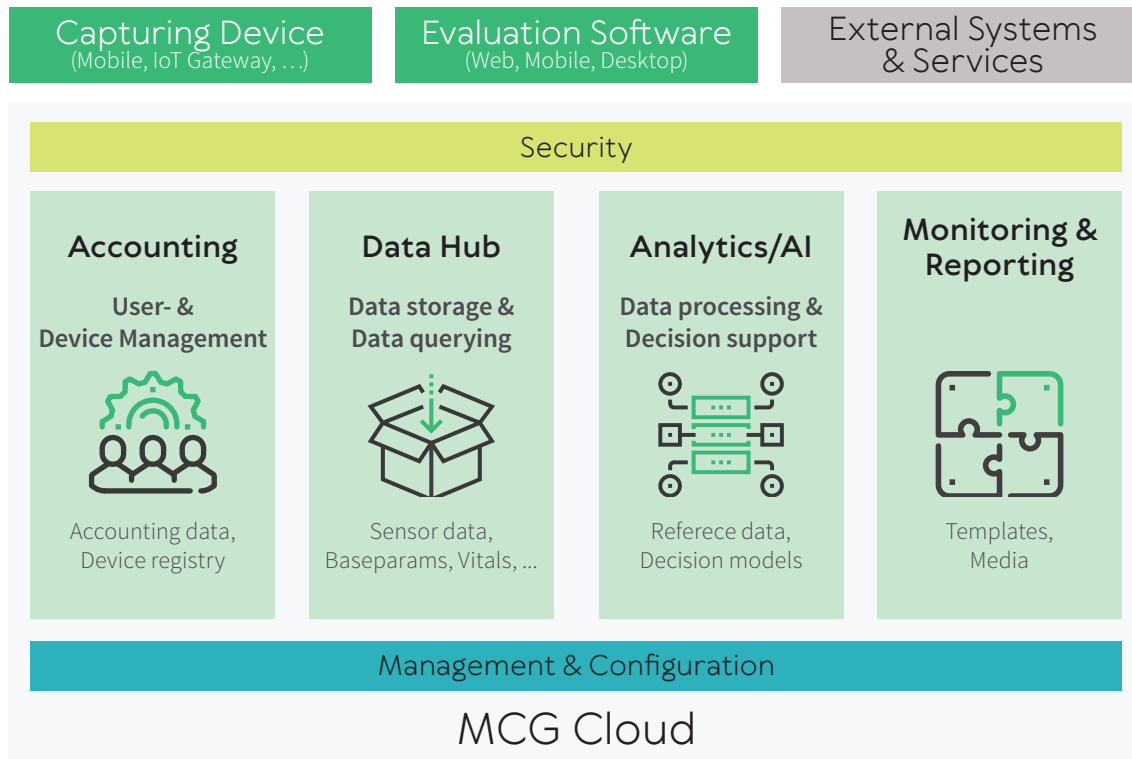
- Processing of captured data based on AI & complex algorithms
- Integration of external data sources & AI services
- Application of validated decision support models

Monitoring & Reporting

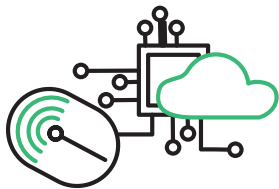
- Real-time feedback for users & professionals during measurement
- Target group specific monitoring, alerting and reporting
- Cross-population evaluations & reportings
- Interconnectivity with external systems (HL7, HIPAA, ...)

MCG CLOUD PLATFORM – KEY FACTS

- **Scalable:** from tiny to large use case / business cases scenarios
- **Secure:** certified security techniques based on latest cryptographic standards
- **Fast:** optimized for real time point of care usage
- **Full data protection compliance:**
 - EU GDPR
 - Privacy by default
 - ISO-27001 certified data hosting
 - Pseudonymized storage of captured data
 - Approved data protection concepts
- **Medical Device regulatory compliance:**
 - FDA, EU MDR, MEDDEV
 - ISO-3485, ISO-14971, IEC-62304, ...
- **Health & business integration:**
 - HL7, FHIR, ..



COMPETITIVE ADVANTAGE



Products & software

- DIGITAL CARE SOLUTION
- SPINE sensor (Med Dev)
- INSOLE sensor (Med Dev)
- ML/AI engine
- Decision support engine



Regulatory expertise

- BfArM, EMA, FDA, CFDA & PMDA
- Software as Med Dev
- Planning & operating clinical trials
- Evaluating clinical trials



Integrated IP strategy

- Full-fledged IP strategy for products & software
- FTO analysis
- Proprietary reference data sets
- Own Patent attorney in team



Access to markets

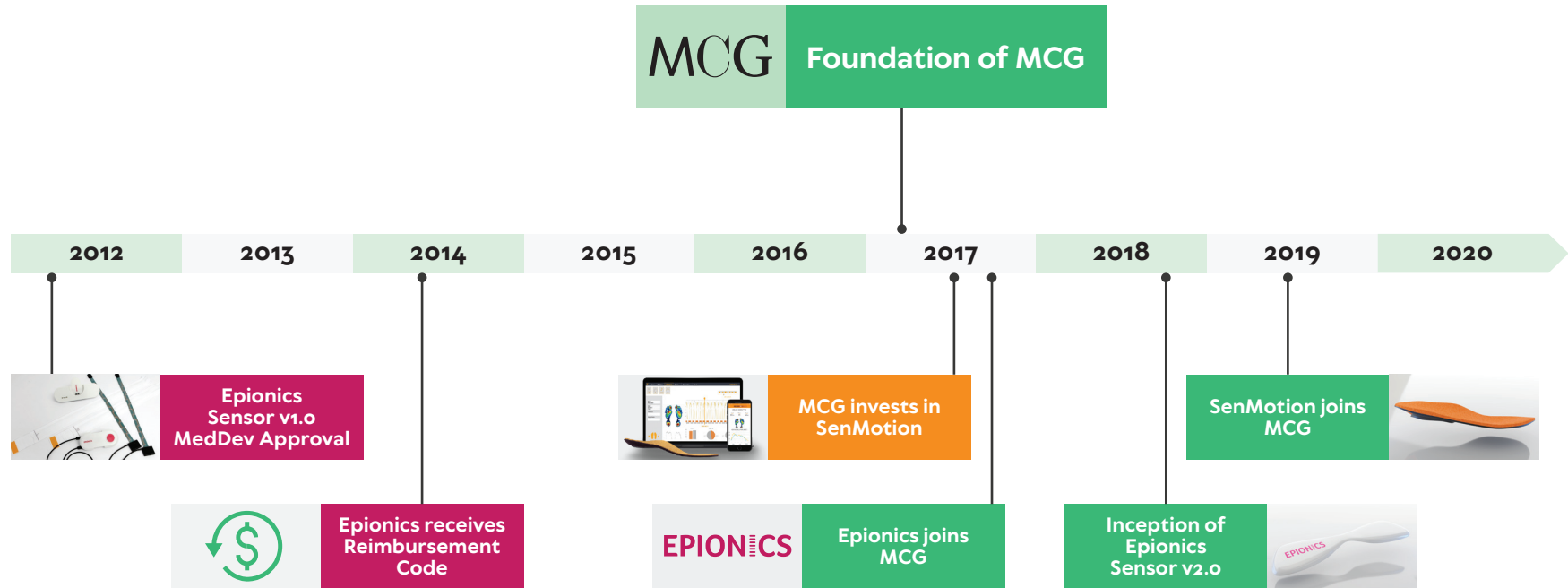
- Know health economics
- Access to payors & health insurances
- Access to hospitals & rehabilitation providers
- Access to OHM providers
- International KOL network



Data protection

- Compliant with EU data-protection & privacy laws
- KOL Dr. Thilo Weichert (co-author of EU-DSGVO)

TIMELINE MCG





THANK YOU!

Hartmut Voss / Michael Weber (Co-CEOs)

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