PURPOSE-DRIVEN KNOWLEDGE FOR HEALTH, RISKS & PERFORMANCE MANAGEMENT

BEHAVIORAL ANALYTICS ENGINE FOR WORK & LIFE
Post-Incident | Pre-Incident | Incident
---|---|---
INCREASING Costs & Disruption

EVENT RESPONSE MODEL

DECREASING Costs & Disruption

RISK MANAGEMENT MODEL

CURRENT: REACTIVE MODEL

DETALYTICS: PROACTIVE & PREVENTIVE MODEL

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First, two important scientific facts
Poor lifestyle habits or choices are key contributors in the development and progression of Preventable Chronic Diseases.
We all have **UNIQUE** patterns of daily habits, behaviors & choices.

They are:

- The fundamental but **MISSING** knowledge needed for regulation and management of **HEALTH**, **RISKS** and **PERFORMANCE**
- Context specific
- Changing over time
- More than the sum of their parts
We operate in the domains that

**Lower Health Risks** (due to lifestyle behaviors)

**Lower Work Safety Risks** (due to human-factor errors, fatigue/burnout)

**Lower Costs** (healthcare, insurance, productivity loss, etc)

**Improve Work Performance** (physiology/mental optimization)

Having built the **Behavioral Analytics Engine** that opens Human Daily Behaviors’ *black-box* for health, risks and performance management
Once this *black box* is unlocked ... your applications are vast
SCALABILITY IN DEPLOYMENT
Vast Applications Of Our Analytics

- Treatment Readiness
- Recovery responses
- Medical tourism
- Mental wellbeing
- Telemedical services optimization

- Cognitive Performance
- Learning optimization
- Management of risks in students and learners

- Trainees response
- Program design
- Recruitment Analytics
- E-sport training solutions

- Task-Readiness
- Productivity & team dynamics
- Fatigue/burnout
- Corporate resilience & Business sustainability

- Risk profiling <> Premium Estimate
- Cost management
- Incentive-based behavior change
- Travel, life and employees' solutions

- Jet-lag management
- Personalization of travel services
- Flying crew wellbeing
- Hospitality Innovations in Personalization of services
- Travel Health and Immunization
**Purpose-Built Enterprise Solutions**

**A**lpha

**Patient health and well-being optimization**

- Primary & Secondary Care
- Telemedicine, Telehealth
- Recovery management
- Treatments’ responses and readiness
- Travel readiness
- Lifestyle behaviours management
- Enhanced telemedicine capabilities
- Remote assessment and patients management
- Risk visibility in infectious diseases monitoring

**Σ**igma

**Work health and risks management system**

- Healthcare personnel, EMS, law enforcement, construction, transport, oil and gas, logistics
- Shift readiness
- Fatigue status
- Training responses
- Mental health vigilance
- Health risks visibility
- Injury prevention.

**Φ**i

**Aviation safety, health, human factors system**

- Pilots, cabin crews, ATC, ground engineers, airport’s security personnel
- Health management
- Flight readiness
- Fatigue status
- Cognitive performance
- Training responses
- Tasks impacts
- Mental and wellbeing management
- Immunization tracker
- Jet Lag Analytics

**Δ**elta

**Enterprise health-productivity management**

- Financial Services, legal, technology, software, IT, research, education, government
- Healthcare/insurance costs reduction
- Corporate Resilience
- Travel health and risks management
- Human factors optimization (productivity)
- Absenteeism/presenteeism analytics
- Remote staff management

**Ε**psilon

**E-games/Pro-sports & Students Health Optimization**

- Athletes, students, e-gamers, coaches, personal trainers, physiotherapists
- Training responses
- On-off season’s track-manage,
- Remote training
- Health integration and optimization of results, grades,
- Students’ Mental well-being monitoring and management
The **Personalization** of AI for Health & Wellbeing

*Why Hardware or Domain Specific Solutions will not adequately address the complex system that is our Body+Mind*

**Impact & Efficacy**

**Hardware Manufacturers**
- Hardware dependency
- Single level analytics and variables
- Vertical applications tied to hardware constraints
- Large degree of variation in threshold (steps, HRV) from vendor to vendor
- Data not normalized between vendors

**Domain-specific Apps**
- Overly specialized vertically
- Limited horizontal scalability
- Curative healthcare, instead of preventive
- Deliverables limited to chosen vertical
- Treatment modality and methodology tied to chosen vendor

**Scalability of Applications**
- Context and person specific
- Purpose driven applications
- Based on patterns detection
- Multi-variables capabilities
- Highly scalable in applications
- Hardware agnostic. Normalized data.
- Capacity for prevention/negative outcome reductions
Life Journey: When your lifestyle Impacts are **Guesswork**

Member of 42

Life Journey: When your lifestyle Impacts are **Known and Guided**

**Window of intervention**
PASSENGERS’ SOLUTIONS
The Connected-Passenger Continuum
PERSONALIZED JET-LAG MANAGEMENT SOLUTION

**PRE-FLIGHT**

Passenger logs in via KF number

**INFLIGHT**

Two options of data input to create personal profile: via chat or questionnaire

**POST-FLIGHT**

Example of data input via questionnaire (Total time needed: 1 min or less)

Based on the personal, flight and travel details provided, Jet-lag assistant calculates the PERSONALIZED JL Impact Score and JL Severity Score
### Detalytics: Enabling End-to-End Personalized Travel Well-being

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<thead>
<tr>
<th></th>
<th>Pre-flight Preparation</th>
<th>In-flight Preparation (Data assessment if connectivity is available)</th>
<th>Post-flight Adjustment with Data Assessment</th>
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<td><strong>Service recommendation for pre-flight well-being</strong></td>
<td>Service recommendation for onboard well-being</td>
<td>Service recommendations based on preferences and post-flight conditions</td>
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<td>Dangerous condition detection (ECG, blood oxygen levels, respiration rate)</td>
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<td><strong>CONTENTS</strong></td>
<td>Yoga exercises for rest/invigoration/ circulation</td>
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<td><strong>Personalized lounge services</strong></td>
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<td>Yoga/workout</td>
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<td>Smart seat settings for work and sleep optimization</td>
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AVIATION PERSONNEL SOLUTIONS
**42 PHI: SOME KEY FEATURES**

**PRE/POST-FLIGHT PLAN**  
Provides guided recommendations in sleep, light exposure, meal/hydration, activities etc to help pilots prepare for forth coming flight in circadian rhythm adjustment and fitness to fly

**FLIGHT READINESS**  
Provides daily flight readiness status 3 days before the scheduled flight – it is based on the pilot’s sleep analytics, fatigue analytics and heart rate analytics

**JET LAG IMPACT SCORE**  
Personalized estimation of the jet lag level upon arrival based on each pilot’s demographics and the context of the flight (duration, direction, time of flight, etc)

**FLIGHT IMPACT SCORE**  
This post-flight score is based on analytics of collective events that happened during the flight – hours slept, activities, meals, incidents during flight, etc. It gives the pilot a contextual comparison of flight impact to flight paths and schedule
BENEFITS: Safety-critical Industries

Aviation, Healthcare, Energy, Logistics

APPLICATIONS
- Individual Task Readiness
- Team Task Readiness
- Fatigue and Burnout Analysis
- Human Factors Cost Management
- (insurance, medical, training, etc)
- Advanced Risk and Safety Management
- Individual & Team Resilience Profile
- Organizational Resilience Assessment
- HCM Analytics for Productivity, Risks, Turnover and Leadership Planning
- Employee Health Management and Optimization
- Medical and Insurance Efficiency Evaluation with ROI Analytics

RESULTS & OUTCOMES
- Reduction in risks and errors related to fatigue or burnout
- Improvement in efficiency in resource planning, management and financial planning
- Improvement in healthcare and insurance cost management
**Connected Care:**
THE VOIDS IN PATIENTS’ HEALTH INFORMATICS

- **Physician’s visibility into patients’ pre-admission functioning data:** NONE
- **Physician’s visibility into patients’ lifestyle & functioning data:** NONE

**Care Providers’ Visibility in:**
- Genomics
- Metabolomics
- Clinical Biochemistry
- Vital Signs Monitoring

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Detalytics 42: Applications in Connected Care

- Treatment Preparation
- Treatment Readiness Status
- Treatment schedules optimization
- Resilience Profile
- Nutritional Profile
- Surgical readiness

- Recovery Management (incl. Fatigue Tracking)
- Resilience Profile
- Stress and Mental Wellbeing Management
- Quality of Patient Daily Life Optimization
- Nutritional Profile
- Therapeutic interventions impacts
- Cognitive and brain ageing improvement

We open the “black box” of patients’ day to day analytics for ex-hospital phases
OUR SOLUTION CAN BE DEPLOYED FOR THESE APPLICATIONS (non-exhaustive list)

- Treatment Preparation
- Treatment Readiness Status
- Treatment schedules optimization
- Recovery Management (including Fatigue Tracking)
- Resilience Profile
- Stress and Mental Wellbeing Management
- Quality of Patient Daily Life Optimization
- Nutritional Profile
- Surgical readiness
- Therapeutic interventions impacts
- Cognitive and brain ageing improvement

LEADING TO OUTCOMES & BENEFITS

- Improvement in treatment and program outcomes
- Increased efficiency in treatment readiness management
- Reduction in re-admission rate
- Longitudinal visibility & active management of recovery
- Improvement in treatment scheduling
- Chronic Diseases surveillance enhancement
42 in HEALTHCARE

Patients Monitoring Console used by Clinical Staff
ENTERPRISE SOLUTIONS
Enhanced Healthcare Cost Management

- Improvement in corporate healthcare costs management through
  - Much higher degree of precision than current solutions based on big data analytics
  - Evidence based management - individual employee’s risk profile instead of average based model

- Readiness for future cost escalation through risks and costs analytics/simulation
Advanced Preventive Health and Wellness Programs

- Alignment of program designs to actual employees’ risk profile for better outcome
- Reduction of wastage and redundancy in wellness programs that do not yield results
- Increase in employees’ cognitive output and productivity
- Travel health solutions help minimize impact of jetlag and hazards for frequent travelers
Enhancements in Corporate Resilience

- Dynamic analytics of resilience and functional status of strategic or critical-function personnel
- Organization Resilience Assessment as part of corporate strategic planning
03 BUSINESS MODEL
BUSINESS - Go-to-Market Models

DIRECT
B2B Platform-as-a-service (PaaS)
- Insurance Companies
- Specialized Healthcare Providers, Telemedicine, Ageing in Place etc.
- Corporate Wellness Providers
- Aviation-Airline Industry

LICENSED
White Label Analytics Engine
- Human Capital Management System
- Human Factor Systems (maintenance engineering ATC, flight crews etc.)
- Workplace Safety Monitoring Systems
- Commercial Platforms (Amazon, Airbnb, Uber) Service providers

EMBEDDED
Integrated into 3rd Party Solution
- EMR/EHR Solution Providers
- Healthcare Diagnostic Systems
- Insurance Companies
- Services with medical content providers (ageing in place)
- IoT related integration

CONSUMERS
PaaS direct to consumers
- Population Health
- Professionals looking for health and performance optimization
- Frustrated users of wearables
- Active lifestyle individuals
- Chronic disease management enhancement (patients)
Seeking Partnerships (non-exhaustive list)

**Healthcare**
(Patients Management)

Ex-point of care analytics of patients’ treatment readiness and response. Remote monitoring of daily functional status. Augmenting telehealth services in quicker decision support and triaging.

**Healthcare**
(Clinical Staff)

Health safety and risks management. Fatigue/burnout management.

**Enterprise**
(Employee Health Risks)

Risks, health and safety assessment and management for in office and remote staff working from home (including mental health, sleep, fatigue, travel health etc.) Predictive analytics for future healthcare costs planning.

**Essential Services**
(Transport, logistics, Mfg, energy, law enforcement)

Task readiness status, health risks, infectious and immunity tracking, fatigue, cardio-metabolic risks and mental health.

**Hospitality & Travel**
(Airlines, Hotels, Services)

Health and safety solutions for SARS-CoV2 as well as general health and well-being innovations for guests based on personalized services (sleep, fatigue, jet lag etc.)

**Education**
(Students: On/Off Campus)

Local or remote management of student’s mental health and cognitive performance.

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04 WHY WORK WITH US
Detalytics: Key Differentiators

ENTRY COMPLEXITY
- "BOOTS ON THE GROUND" experience-generated models and R&D content supported by more than 10 years of burnout, resilience research and interventions
- MULTI MODELS, CROSS DISCIPLINES approach to algorithms’ and models’ architecture
- SYSTEM-THINKING APPROACH: our products are part of a platform ecosystem we are building across vectors

PARADIGM SHIFT
- Assessing that which has been ignored (daily functioning and lifestyle patterns)
- UNIVERSAL and SCALABLE: Life, Health, Work
- FLEXIBILITY in DEPLOYMENT: PaaS, White-label Licensing or Embedded Model

MORE THAN JUST PROVIDING A PRODUCT
- A rich international network of domain-experts ready to advance clients’ engagement from products to service to consultancy
- A platform for 3rd party eco-system partners to provide relevant services and tap on the analytics Detalytics provides
05 THE TEAM
WHO WE ARE

Medical Science  Software Engineering  Clinical Research  Business Development

Data Science  Artificial Intelligence  Data Securitization  International Partners

Clinical Research & Industry Experience
Healthcare – Aviation - Enterprise
FOUNDERS

Dr. Florence H-Jennings
PhD. MSc. MSocSc. MSc (Eng.)
Co-founder, Chief Scientist, R&D
France - Singapore

Sha Wang
B(Eng.) Computer Science
Co-founder, CTO
China - Singapore
25 years of foundation clinical work and research experience

Including research & interventions for burnout in hospital physicians. Resilience research in hyper-selected individuals (physicians, special forces, military, pilots)

Europe, USA & Asia
Proof of concepts and hypothesis testing in healthcare facilities

Academic Rigor and Methodology
Publications, conferences, continuous academic literature updates

Industrial and Scientific Partnerships
With international institutions and experts from relevant industries
PROPRIETARY ALGORITHMS AND MODELS

16
Existing Proprietary Algorithms
(PFS; Lifestyle Impact Score; Sleep Analytics; Activity analytics; Cardio-Fitness Analytics; Fatigue Analytics including circadian analytics, Fatigue Score)

10
Additional Algorithms in development using novel data sets

2
Main Proprietary Research Models
Resilience development and physiological readiness for tasks. Burnout development pathways from physiological misalignments

3
Further POCs on the dominant parameters affecting daily physiological functioning

3
Additional POCs on patterns identification in daily behaviors impacting health and performance for individuals and teams
ARE YOU READY FOR THE PERSONALIZATION OF AI

WE ARE DETALYTICS

information@detalytics.com