Session 70 PD, Impact of Silicon Valley Start-ups on Health Insurance

Moderator:
Richard J. Tucker, FSA, MAAA

Presenters:
Janet Anderson
Nik Tehrani, Ph.D.
Connie B. Weisman
Biodemography & Facial Analytics
External data and contextual information will become more important than historical internal data for predicting risk and for pricing.

10 Trends at Heart of Insurtech Revolution - Sam Evans, InsuranceThoughtLeadership
Life Expectancy & Healthy Life Expectancy
Age + Gender + BMI + Smoking Status
Level of physical activity + contextual feedback.
How we assess Life Expectancy with a photo.
Live life tables + Predictive analytics using Age-Period-Cohort (APC) Models
Validate self-reported information, create new risk pools and segments & engage new audiences via digital channels.
Highly personalized, easy-to-use Financial Planning Tool
Changing the Face of Insurance Underwriting

Life Event Planning. Reinvented.

http://bit.do/SOA17
Thank you
A New Health Management Paradigm

Provider of advanced health assessment and health management solutions

Future direction for Underwriting and Long Term Care Management
Introduction

The Company

- Established in March of 2013
- Team: 34 Full Time, 15+ Consultants (US, China, India, Belarus)
- A network of Medical Advisors
  Dr. Steven Steinhubl, Chief Medical Advisor of DynoSense, Director of Scripps Inst.
- Closed series-A funding and raised $9.4M, April 2015
- Established Strategic Partners with direct investment
- Medical grade technologies
  17+ Patents and growing
  ISO-13485 and HIPPA Certified. CE, Health Canada, HSA Approved
  FDA/CFDA/ – WIP PMDA (upcoming)
Our Solutions

What is required?

- Digital Health Platform: Effective health assessment and care management platform.
- Health Data: Meaningful and actionable health data.
- Engagement Tools: Personalized health educational and engagement tools to improve health behaviors.
**DynoCare** Health management platform
- Customizable care plans
- Analyzed and filtered health data
- Accessible personalized health data
- 3-way video conferencing & messaging
- Notifications and health tips reminders
- Integrated procurement
- Billing system management

**DynoSensor** Health assessment tool
- World’s 1st fully integrated health scanner
- 33 health metrics within 60 seconds
- Cloud-based & bluetooth operated

**DynoLife** Users’ platform
- Connect with care-coordinator & family
- Health education
- Improved health
Our Roadmap  Health Monitoring & Health Management System

V1000
11 Sensors
Vital Signs
Gas Analysis

33+ Health Matrices

2016

T1600
Weight / BMI / BMI
Bone Density
Visceral Fat
Muscle Mass
Body Water

T2000
16 Sensors
Sleep Monitor
Relative Hydration
Acetone/NOx

80+ Health Matrices

2018

Moon
Wifi connection
Cloud store
Authentication
Mobile IOS
HIPAA (Privacy)
API support
Health Indexing

Sun
Adaptive
Trending
Alerting

Galaxy
MDSA
Data aggregation

Population based data for Big Data Analytics

100,000 Medication information
15,000 Nutritional information

Detection
✓ Acid reflex
✓ Asthmatic conditions
✓ Caloric burn
✓ Stress
✓ Smoking
✓ Alcohol
Clinical Evaluation
Clinical Evaluation

Usability Study - Elderly Care Facility 2015

- One week study of participants
  Conducted 3-4 tests per day per individual

- Analytic identified two abnormalities

- Conducting follow up trial next month

Patient #1 – 73 yrs Female, Alerted for Premature Ventricular Contractions, PVC

Patient #2 – 74 yrs Female, Alerted for Irregular Arrhythmia

Elderly care facility research images.
Clinical Evaluation

Usability Study - Elderly Care Facility 2016

- One week study of 30 participants
  Conducted 2 tests per day per individual

- The on the 3rd day, identified a patient with super high BP that ended up in the hospital
Clinical Evaluation

FDA Validation 2016

- One week study of 30 participants
  Conducted 3 tests per individual

- SpO2 was reduced to 70% to emulate high altitude and lack of oxygen
Clinical Evaluation

FDA Validation Study 2016

- One week study of 30 participants
  Conducted minimum 2 tests per individual

- Oral temperature was verified against FDA approved digital thermometer
Clinical Evaluation

Usability Study  Hospital Center

- Two Hospitals in China (2015)
  Participants over a period of 2 days

- IRB approved for conducting two study in San Mateo County Hospital with 60 patients (2017)
Market Potential

01 Market Segments

02 Business Model
Market Potential

Total Available Market

Elderly Care
- $3.8 B US
- $70+ B Worldwide
Payment Model
Mostly Private

Chronic Care
- $5.5 B US
- $100+ B Worldwide
Payment Model
CPT 99490 US
Varies Worldwide

Consumer mHealth
- $19 B US
- $230+ B Worldwide
Payment Model
Consumer or Corporate

Assisted Home Living

Home Monitoring and CPT 99490

Direct to consumer and corporate wellness
Market Potential

Business Model

- **Fixed cost for health assessment including sensory system & platform**
- **Recurring revenue sharing (Analytics & Big Data Mining)**
Care Assistant

DynoAdmin

- Coordination Service for Large Group of Subscribers
- Big Data analytics that automatically filter massive amounts of subscribers and focus changes
- Manage statistics, notifications and respond to questions
- Provide Tele-assistance to subscribers
- Conduct targeted health surveys
- Orients and educates subscribers and their Families
- Evaluates outcomes over period of time
Interface

DynoConnect

- Support for connectivity to custom IT system:
  - Risk Assessment Officer review
  - Digitalize underwriting
  - Automatic underwriting process

- Custom API
Value Chain for Insurance Companies
Engagement Trends

Insurance companies in U.S.

- Risk estimation process development and improvement
  Risk analytics for advanced products / services
  Improve risk estimation process by using advanced medical analysis technology

- Process digitization

- Analyze and build infrastructure of medical big data

- Market channel enhancement

- Enhanced subscriber care experience

- Expanding into the growing medical care and nursing care insurance
What does this mean?

- **Bid Data** - Higher level of visibility to the individual’s health conditions for underwriting purposes
- **ROI** - Periodic assessment reports of changes for encouraging healthier subscribers
- **Health Consciousness** - Providing subscribers a comprehensive health management and health education tools to encourage healthier subscriber with built-in incentive plans
- **Long term care management tools and system**
  - Increased accountability of the patients and care providers
- **Efficient and evidence-based of the subscriber’s health assessment**
- **Expanding into the growing medical care and nursing care insurance**
Demo
Q&A
Thank you
WELCOME

PLUG AND PLAY

pnptc.com
THE EARLY DAYS

The Tenants of the “Lucky” Building:

Google

logitech

PayPal

DANGER
Innovation should be open to anyone, anywhere.
WHAT IS PLUG AND PLAY?

The ultimate startup ecosystem.
WHAT WE DO

Boost
We accelerate and invest in startups.

Connect
We matchmake startups and corporations.

Meet
We host major industry events daily.
OUR ECOSYSTEM INCLUDES

- Startups / Technology Vendors
- Corporations
- Investors
- Regulators
- Universities
- Mentors / Advisors
- Strategic Partners
SOME OF OUR SUCCESS STORIES
ON A GLOBAL SCALE

Silicon Valley

Los Angeles

Guadalajara

Paris (x2)

Amsterdam

Berlin (x2)

Valencia

Stuttgart

São Paulo

Valencia

Zhengzhou

Xi’an

Shanghai

Chongqing

Suzhou

Shenzhen

Singapore

Jakarta

Beijing

Hangzhou

Suzhou

Xi’an

Chongqing

Shenzhen

Singapore

Jakarta

Beijing
ON A GLOBAL SCALE

PLUG AND PLAY

Silicon Valley

Founded: 2006
Location: Sunnyvale
Size: 180,000 sq. ft.

600+ Investments since 2006

$5B Raised by startups

150+ Corporate partners

200 VC partners

410 Startup tenants

Silicon Valley
SOURCING PROCESS

VC Partners
E.g. Andreessen Horowitz, Canaan, Norwest, Bessemer

Universities
E.g. Harvard, MIT, Stanford, Berkeley

Active Sourcing
E.g. News, CB Insights, Angel List, etc.

Inbound Applications
E.g. Through websites, cold outreach, etc.

Government Partners
E.g. Advantage Austria, CTA (Canadian Technology Accelerator), KISED (Korea), TIECTW (Taiwan)

Events & International
E.g. Axel Springer-Plug and Play, Money 20/20, Web Summit, CES

5000 startups sourced
Insurtech
TRENDS: INSURTECH

I. Product innovation
   - Digital transformation improving user experience and risk assessment.

II. New sources of risk
   - E.g. Cyber security, epidemics, and other modern concerns.

III. Disruptive ideas
   - Industry changing business models like the shared economy that are transforming current markets.
I. Product innovation

**User Centricity:** Shifting the industry focus to the user, improving experience, better distribution.

**Underwriting:** Facilitating more data for better risk assessment.

**Mitigation of Risk:** Shifting the role of the industry from paying for the loss to preventing the loss.

**Cost Reduction:** Reducing claim cost, more efficient marketing, better operations.
<table>
<thead>
<tr>
<th>Customer Acq.</th>
<th>Policy Underwriting</th>
<th>Customer Exp. / Wellness</th>
<th>Assets / Investment</th>
<th>Claims</th>
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</thead>
<tbody>
<tr>
<td>Distribution Partners</td>
<td>Accelerated Underwriting</td>
<td>Physical Wellness</td>
<td>Investment Risk</td>
<td>Data Enrichment</td>
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<tr>
<td>New Distribution Channels</td>
<td>Fraud Detection</td>
<td>Mental Wellness</td>
<td>Assessment</td>
<td>Fraud Detection</td>
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<tr>
<td>Digital Agencies</td>
<td>Non-Intrusive Risk Assessment</td>
<td>Increasing Points of Contact</td>
<td>Diversifying Portfolio</td>
<td>Assessment Tech</td>
</tr>
<tr>
<td>Customer Intelligence</td>
<td>Big Data and A.I.</td>
<td>Customer Support</td>
<td>Signals/Triggers</td>
<td>Claims Partners</td>
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<tr>
<td>Targeted Marketing</td>
<td>Data Enrichment</td>
<td>Digitalization</td>
<td>Investment Partners</td>
<td>Settlements</td>
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<tr>
<td>Sales Tools</td>
<td>Dynamic Premiums</td>
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<td>Cross-Selling</td>
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Health & Wellness
HEALTH & WELLNESS ECOSYSTEM

Shire

Johnson & Johnson

Pfizer

AARP

Willis Towers Watson

Deloitte

OSF

Zimmer Biomet

SCA

UMMC

Boehringer Ingelheim

SCHÖN KLINIK
TRENDS: HEALTH & WELLNESS

I. Wellness
- Sleep, nutrition, physical activity, stress management, and smoking cessation.

II. Longevity
- 50+ market care-taking and caregiving tools.

III. Digital health
- Track, manage, and improve healthcare.
## TRENDS: HEALTH & WELLNESS

<table>
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<tr>
<th>Reactive → Preventive</th>
<th>Digital Services</th>
<th>Aging Population</th>
<th>Chronic Care Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rising health care costs is shifting from reactive to preventive.</td>
<td>More than 75% of all patients expect to use digital services in the future.</td>
<td>Aging population is the fastest growing trend. The number of older people is outpacing the caregivers available.</td>
<td>Chronic illness accounts for 75% national health care costs.</td>
</tr>
</tbody>
</table>