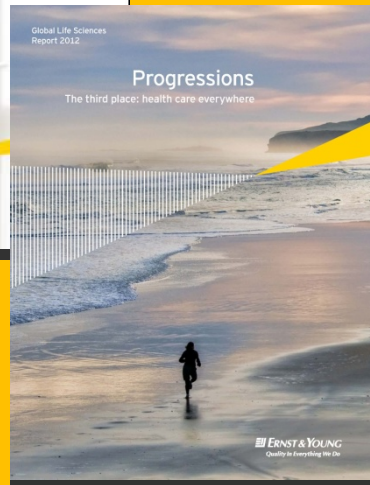


Reframing Innovation for Life Sciences Companies

A Presentation to the Twelfth
Population Health and Care
Coordination

Philadelphia
February 2012

Pharma 3.0 – The Third Place(s) for Healthcare



Progressions 2010

- ▶ “If”, “when” and “why”?
- ▶ Business model transformation, moving from products to services

Progressions 2011

- ▶ “What”, “so what” and “how”?
- ▶ Core capabilities and business processes

Progressions 2012

- ▶ “Where”, “when” and “how much”?
- ▶ Behavioral change of patients, business leaders and healthcare stakeholders

Agenda for today



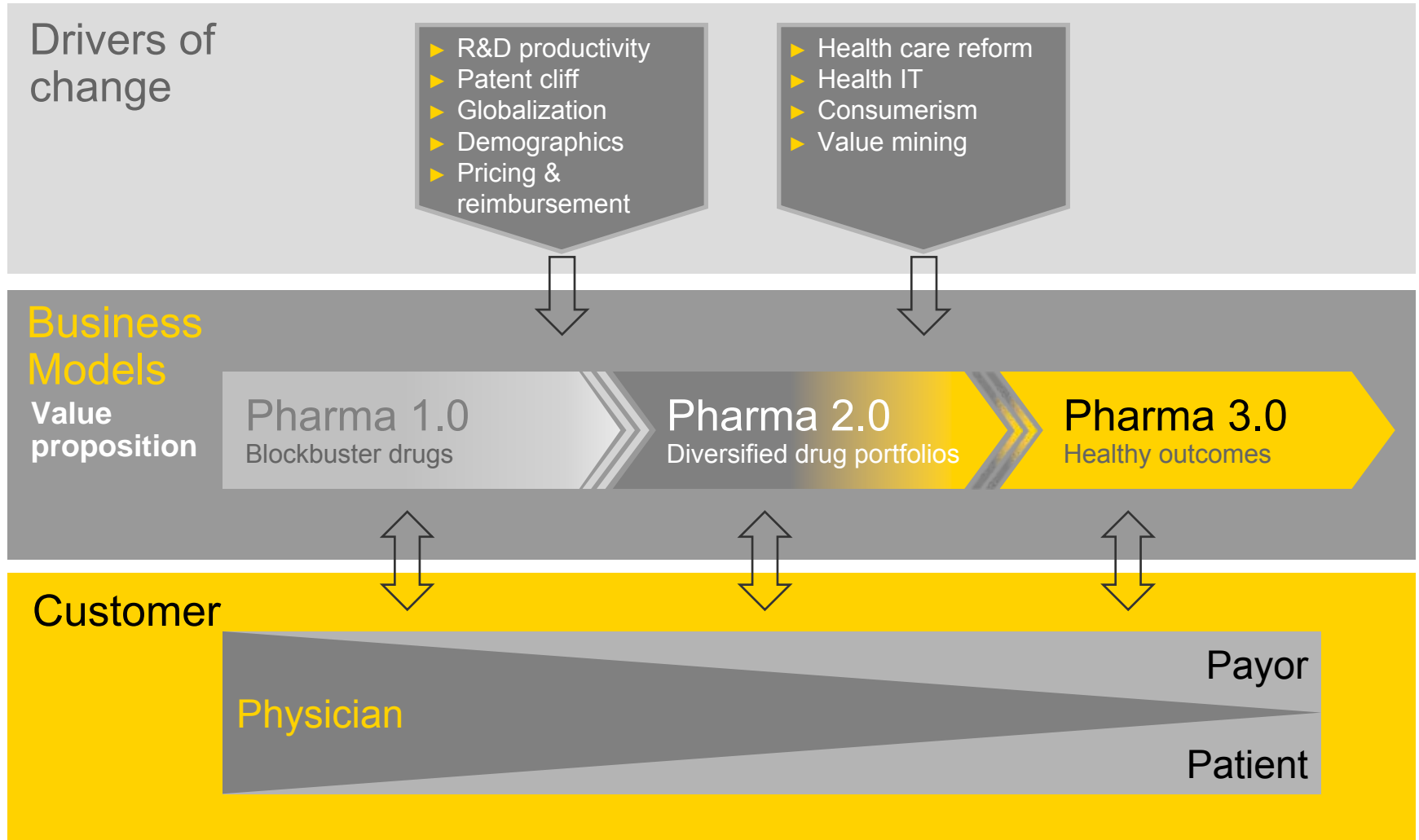
Pharma 3.0 – The Third place(s) for Healthcare

Implications for Innovation for Life Sciences Industry

Getting to Pharma 3.0

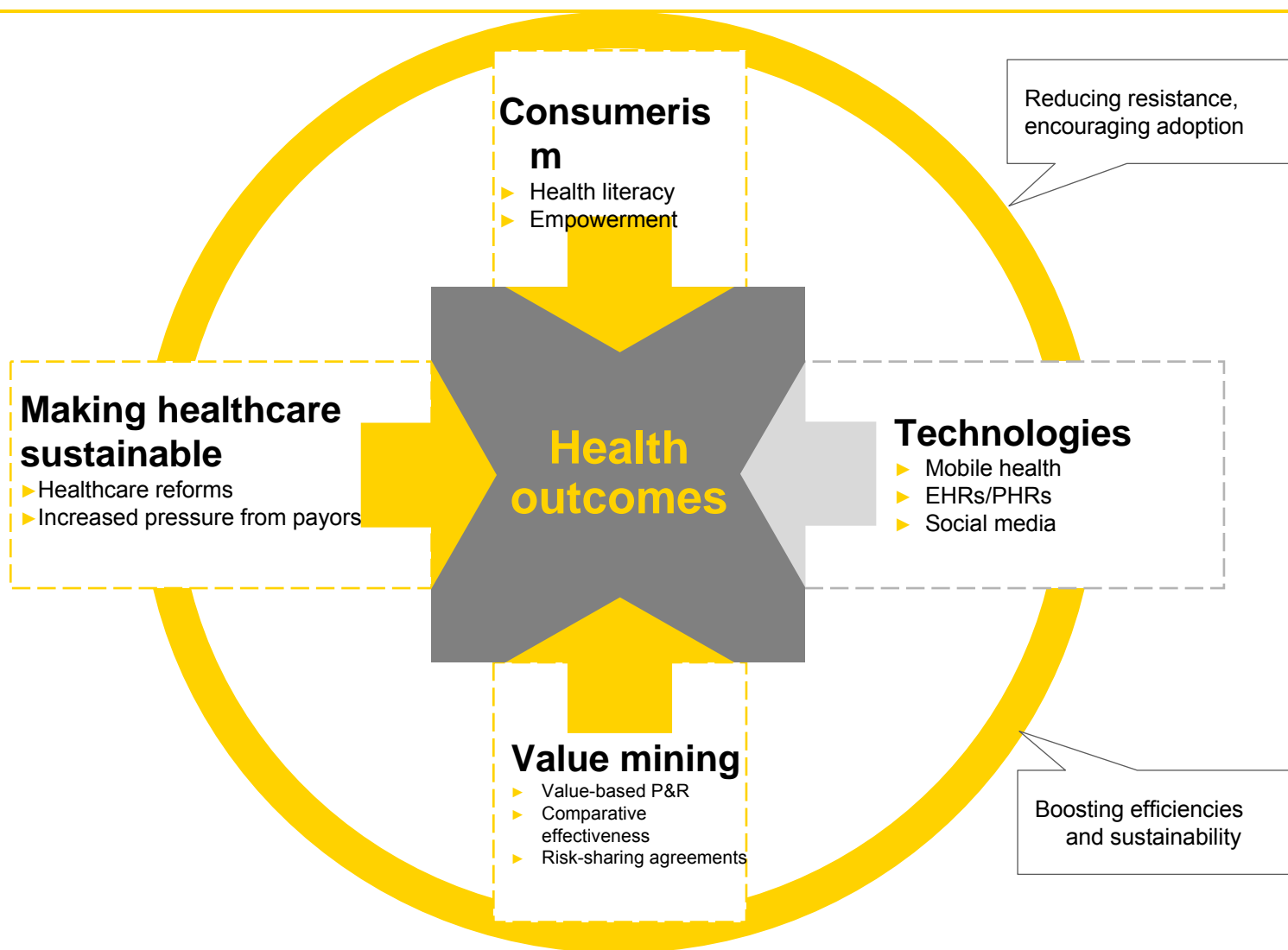
Pharma 3.0

From pharma's perspective



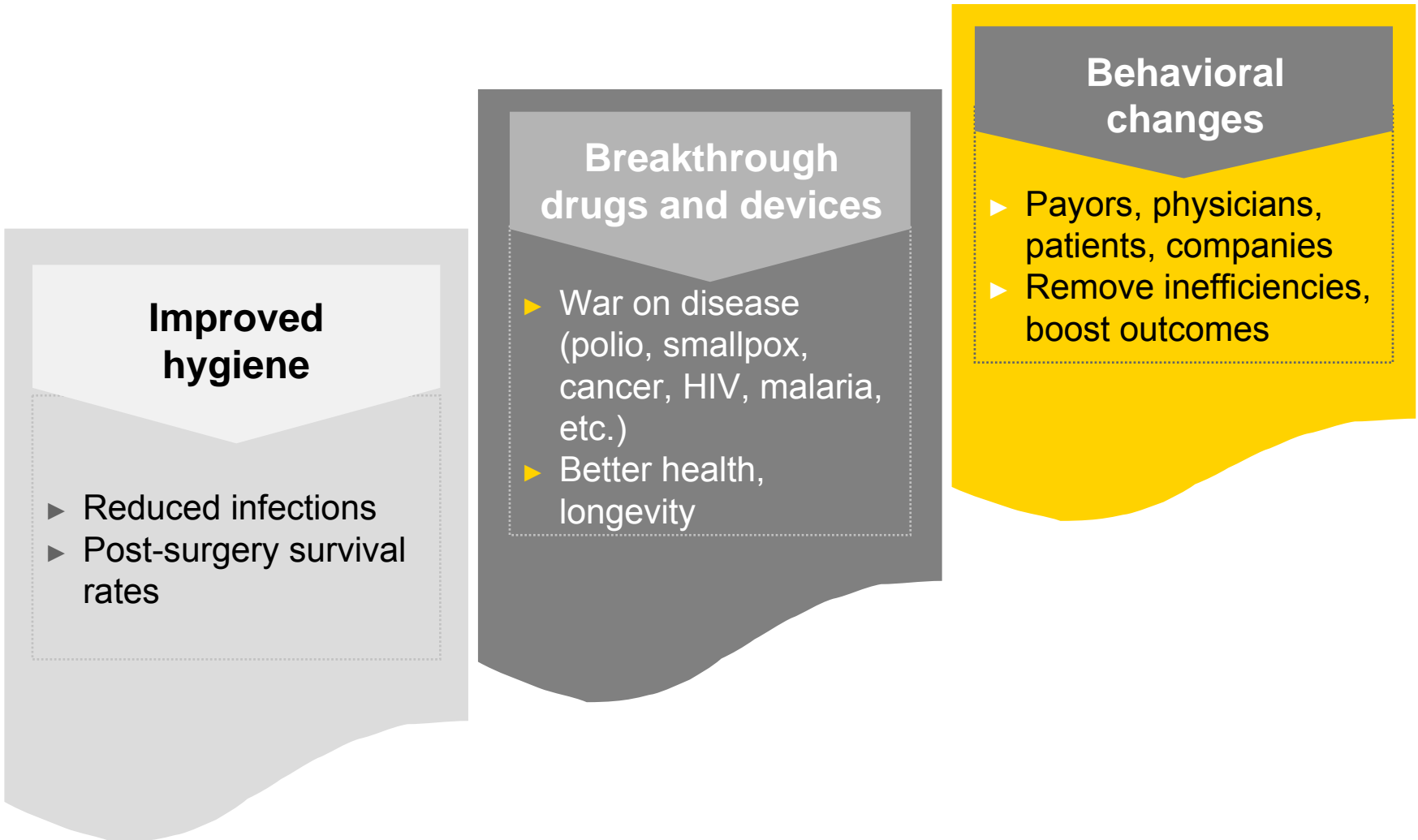
Pharma 3.0

What is driving this shift?



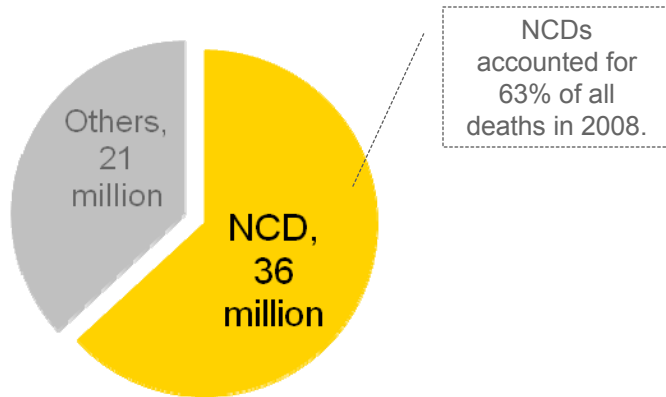
Major advances in health outcomes

Three waves



Increased burden of chronic disease

Of 57 million deaths in 2008, 36 million were due to NCDs.



Nearly 80% of NCD deaths — around 29 million people — occurred in low- and middle-income countries...

Truth #1 Chronic diseases are the No. 1 cause of death and disability in the U.S.

Truth #2 Treating patients with chronic diseases accounts for 75 percent of the nation's health care spending.

Truth #3 Two-thirds of the increase in health care spending is due to increased prevalence of treated chronic disease.

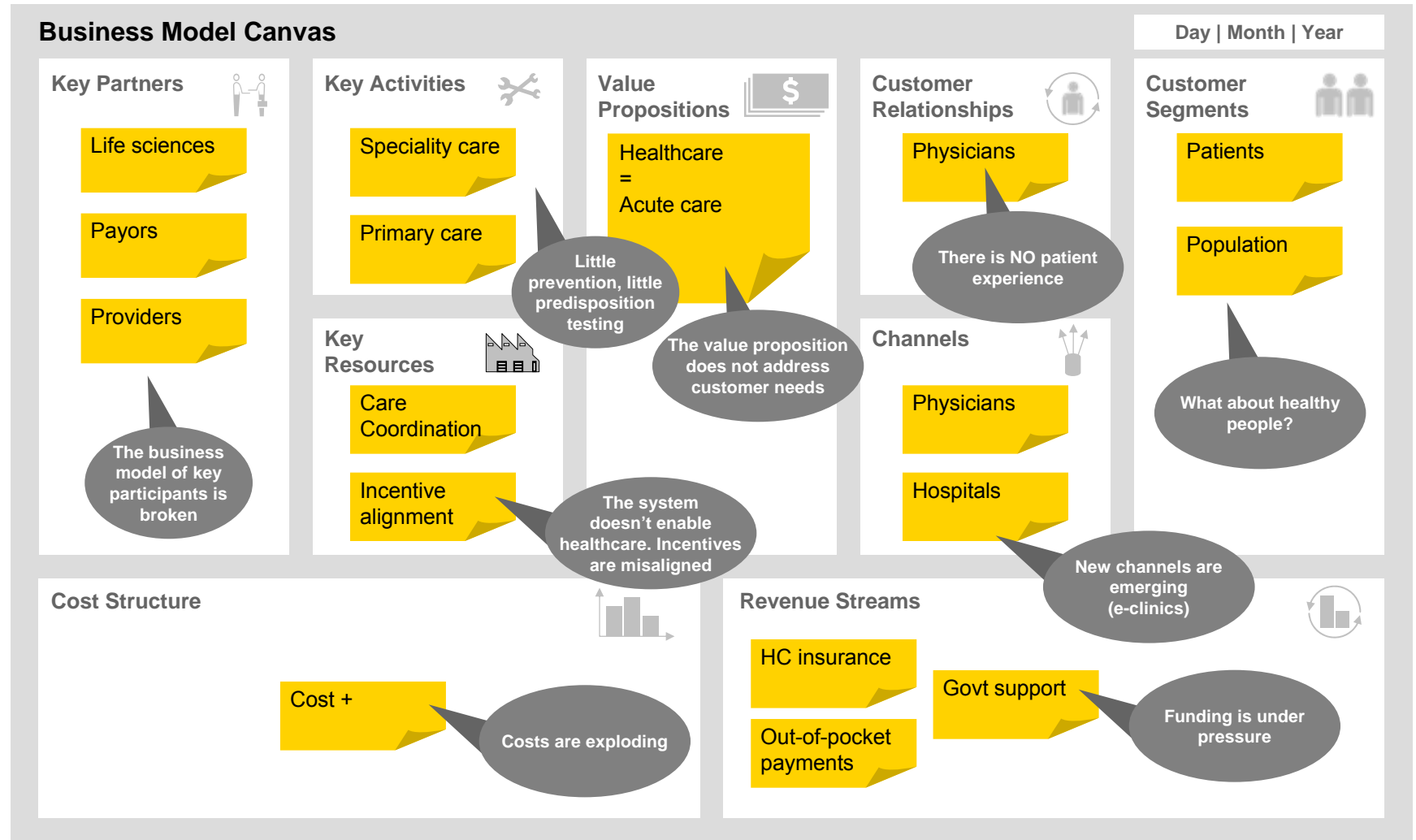
Truth #4 The doubling of obesity between 1987 and today accounts for 20 to 30 percent of the rise in health care spending.

Truth #5 The vast majority of cases of chronic disease could be better prevented or managed.

Truth #6 Many Americans are unaware of the extent to which chronic diseases could be better prevented or managed.

Sources: WHO and www.fightchronicdisease.org

The business model of healthcare is broken



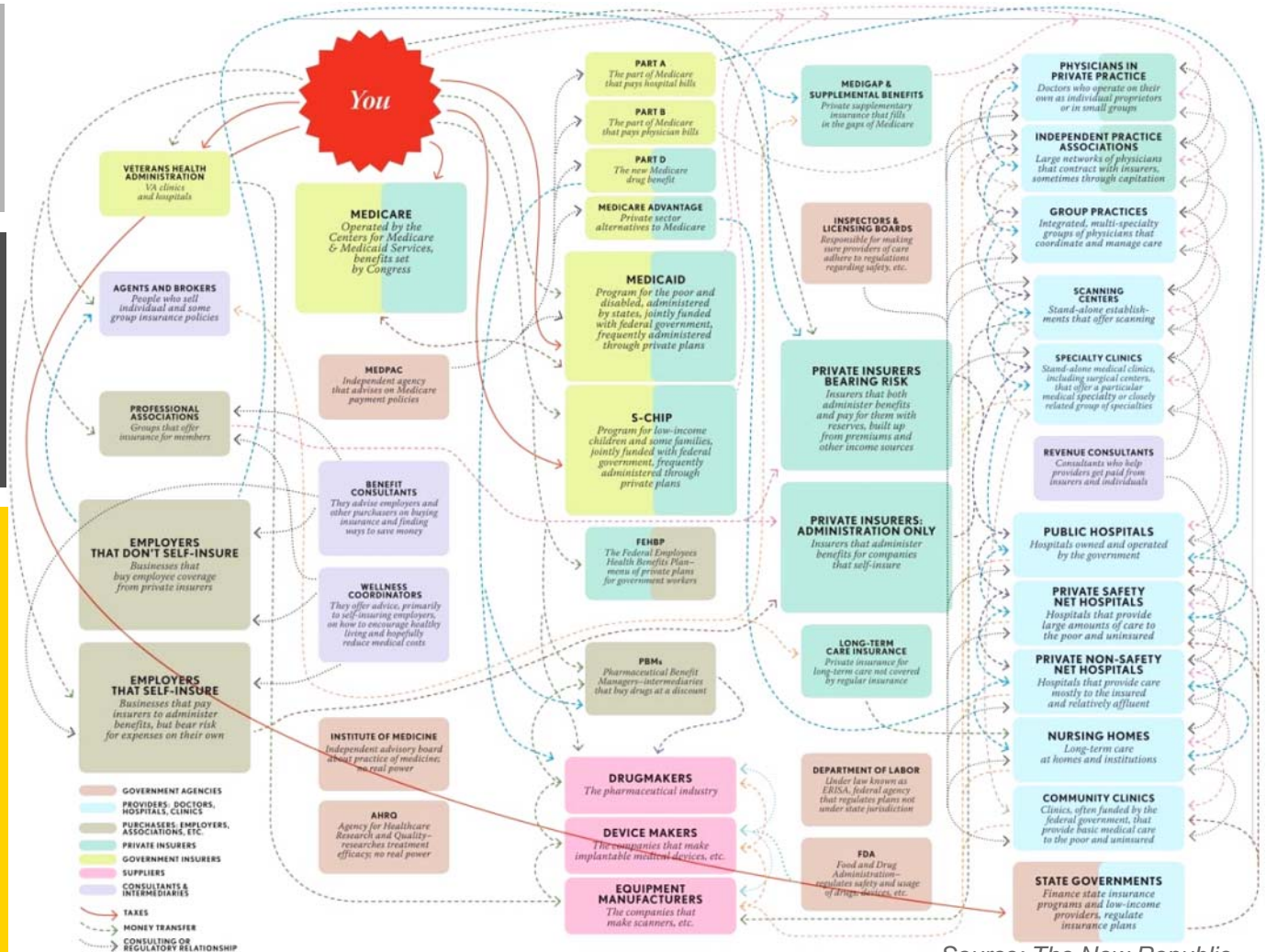
Enabling behavioral change

Disrupting the “value network”

Today's value network is not aligned around outcomes.

Without a new VN, isolated changes will get subsumed by existing VN.

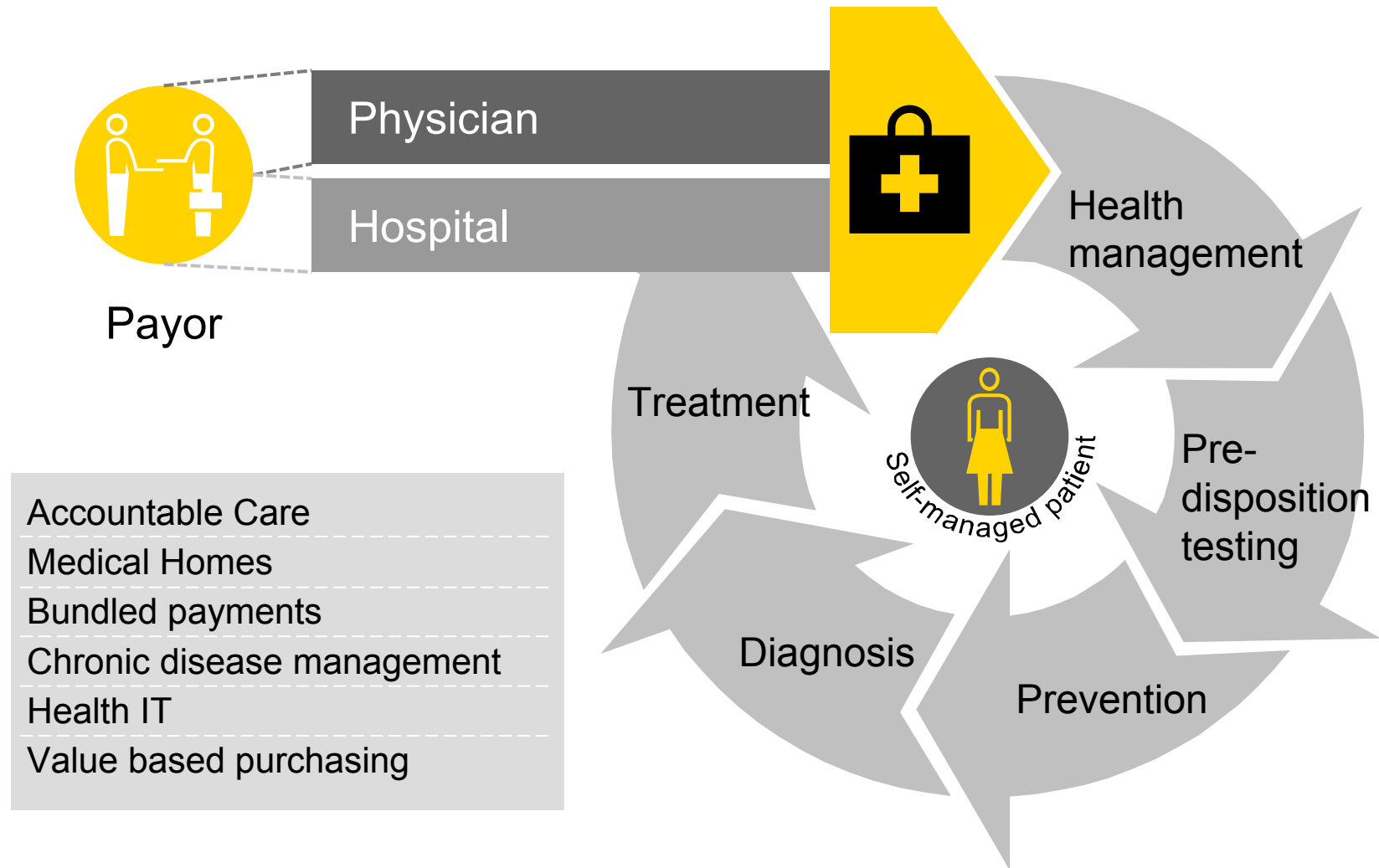
The outcomes ecosystem is not inevitable. Getting there requires **coordinated action** to align metrics, standards, incentives.



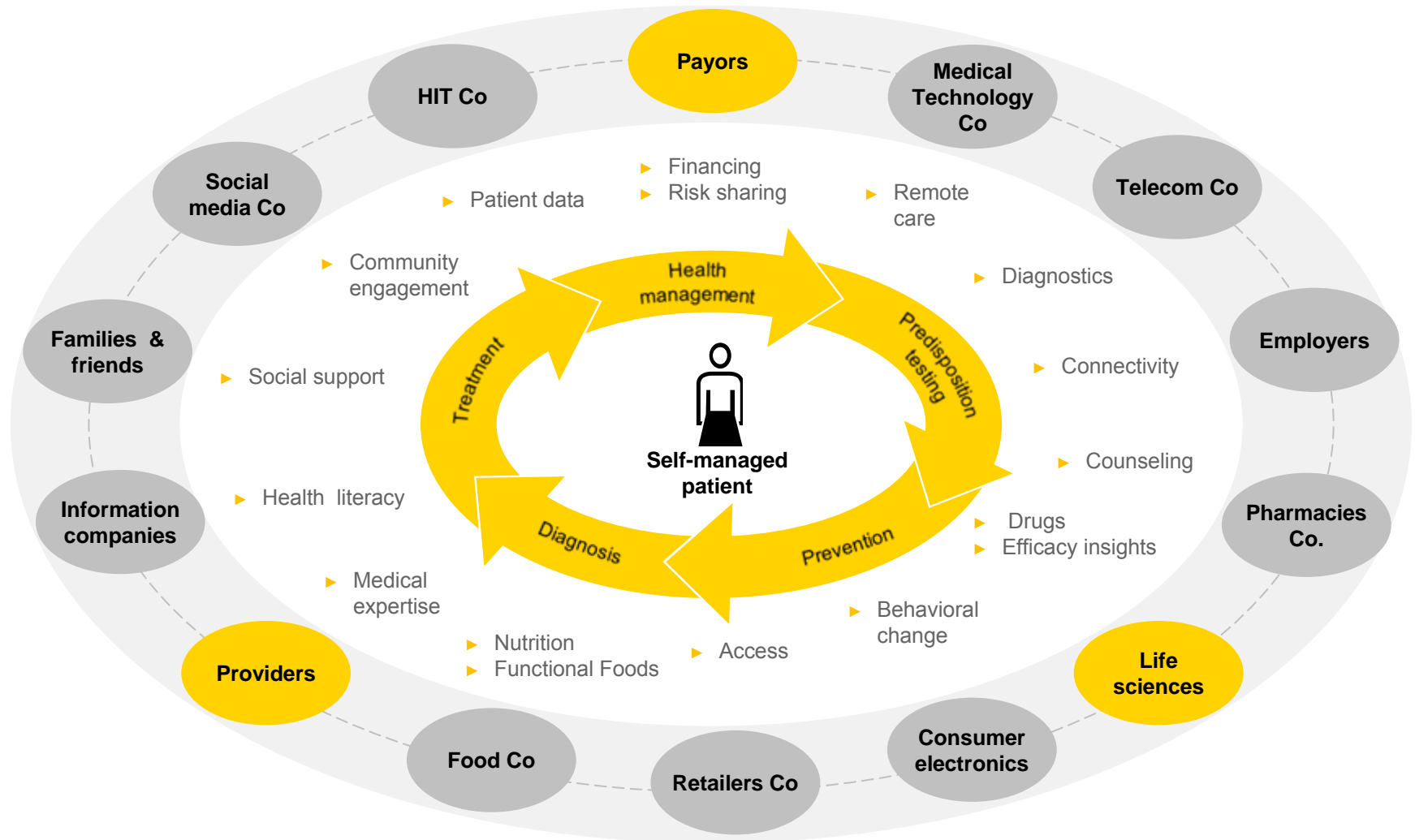
Source: The New Republic

The Third Place(s) for Healthcare

Shifting epicenter of healthcare delivery

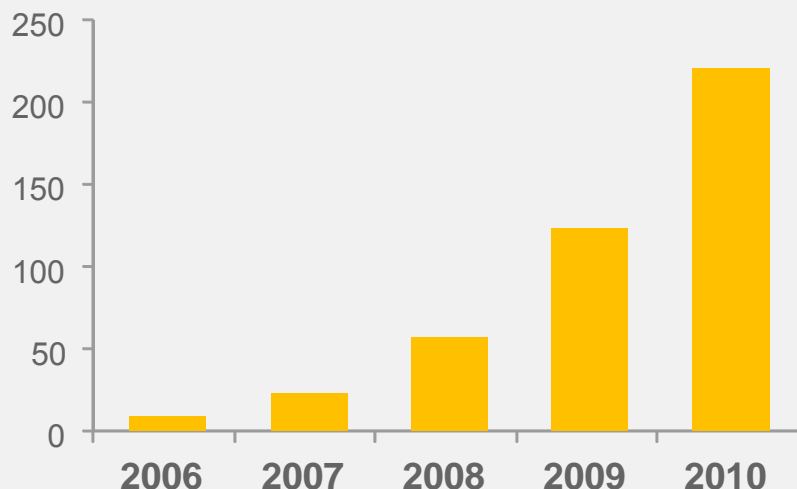


What are the assets stakeholders can leverage?



The ecosystem advances

Pharma companies: 78% increase in number of 3.0 initiatives



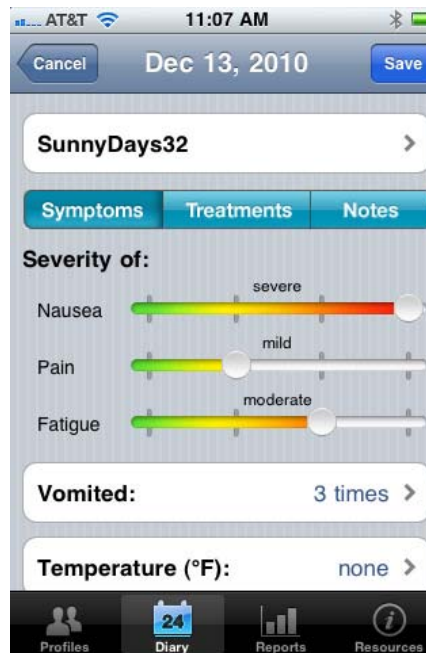
- ▶ **Smartphones** lead the way
- ▶ Moving **beyond diabetes** into broad spectrum of disease states
- ▶ More **holistic approaches** to improving outcomes

Non-pharma companies: outpacing pharma with >\$20b committed to date

Selected investments:

\$2.8b	Samsung	Electronic health equipment
\$0.5b	Nestle	Health and wellness products for diabetes, obesity, etc.
\$2.5b	Pepsico	Drinks/snacks inspired by Traditional Chinese Medicine
\$6.0b	GE	Health innovation initiative (improve care for more people at lower cost)
\$0.8b	TELUS	Social network for Canadian patients to manage health

Apps for patients



Sources: www.apple.com

The ecosystem advances

Non-traditional players – Health as the new green



Ford Motor Company and WellDoc® Announce Unique Research Collaboration to Help Patients Manage their Health on the Road 18 May 2011

Groundbreaking integration aims to bring mHealth services to the automotive industry to help improve chronic disease management outcomes and reduce healthcare costs

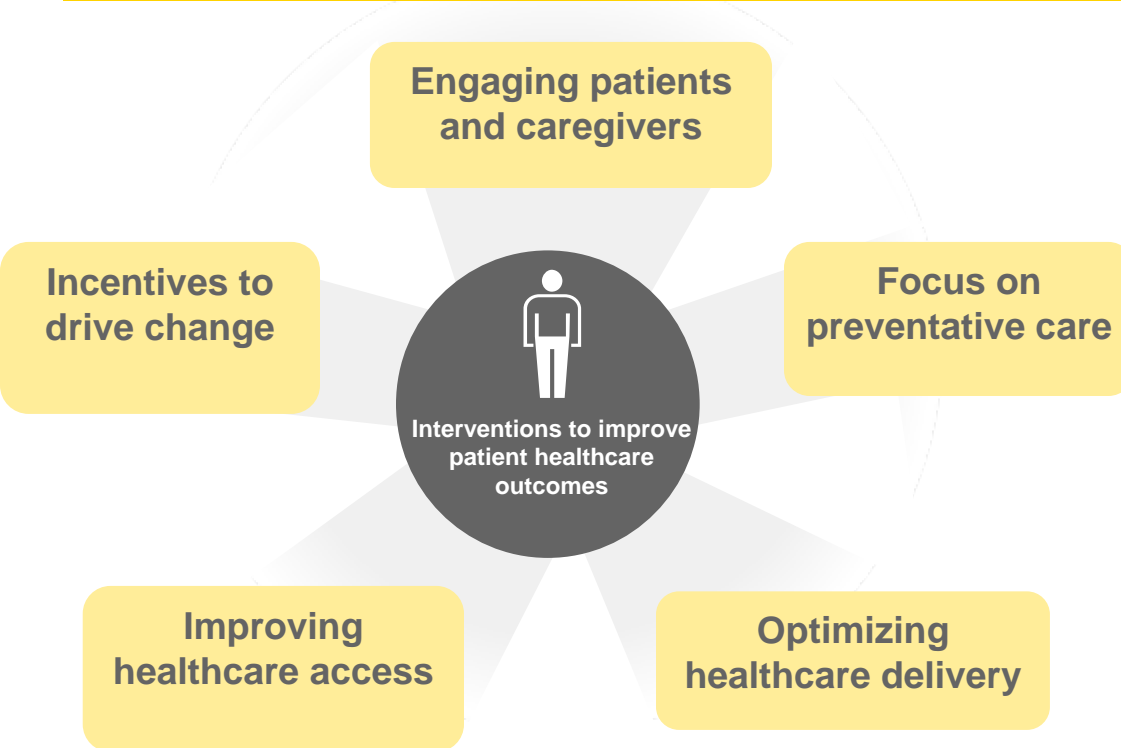
The new TOTO Intelligence Toilet is a sure thing when it comes to monitoring your health. 07 September 2010

- ▶ Measure body weight
- ▶ Checks your urine, BMI, body temperature and blood sugar level
- ▶ Data extracted, graphed and displayed at a wall monitor or PC



The Third Place in Healthcare will redefine the system and the business models of the key players

Serving patients' unmet needs and improving network-based adherence...



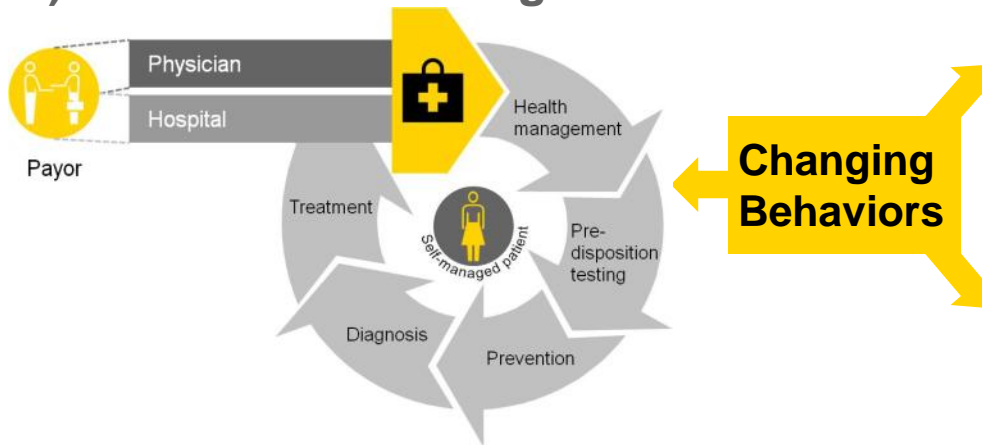
....closes the final link in providing Personalized, Preventative Healthcare

- ▶ **Enhanced diagnoses**
- ▶ **Improved prognosis**
- ▶ **Increase effectiveness and efficacy of treatment**
- ▶ **Reducing relapse or worsening of condition**
- ▶ **Containing mortality rates**

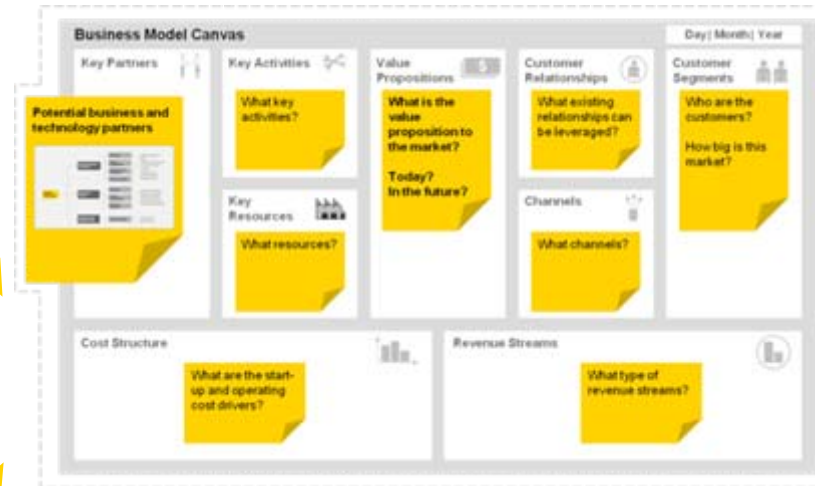
The Third place(s) for Healthcare

Shifting epicenter of healthcare delivery

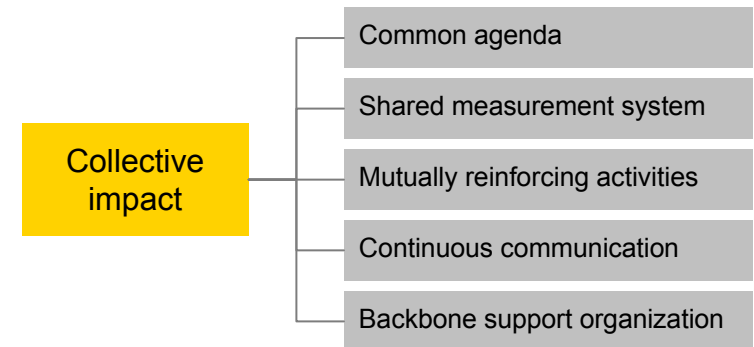
1) Patients: self-management



2) Industry: business models

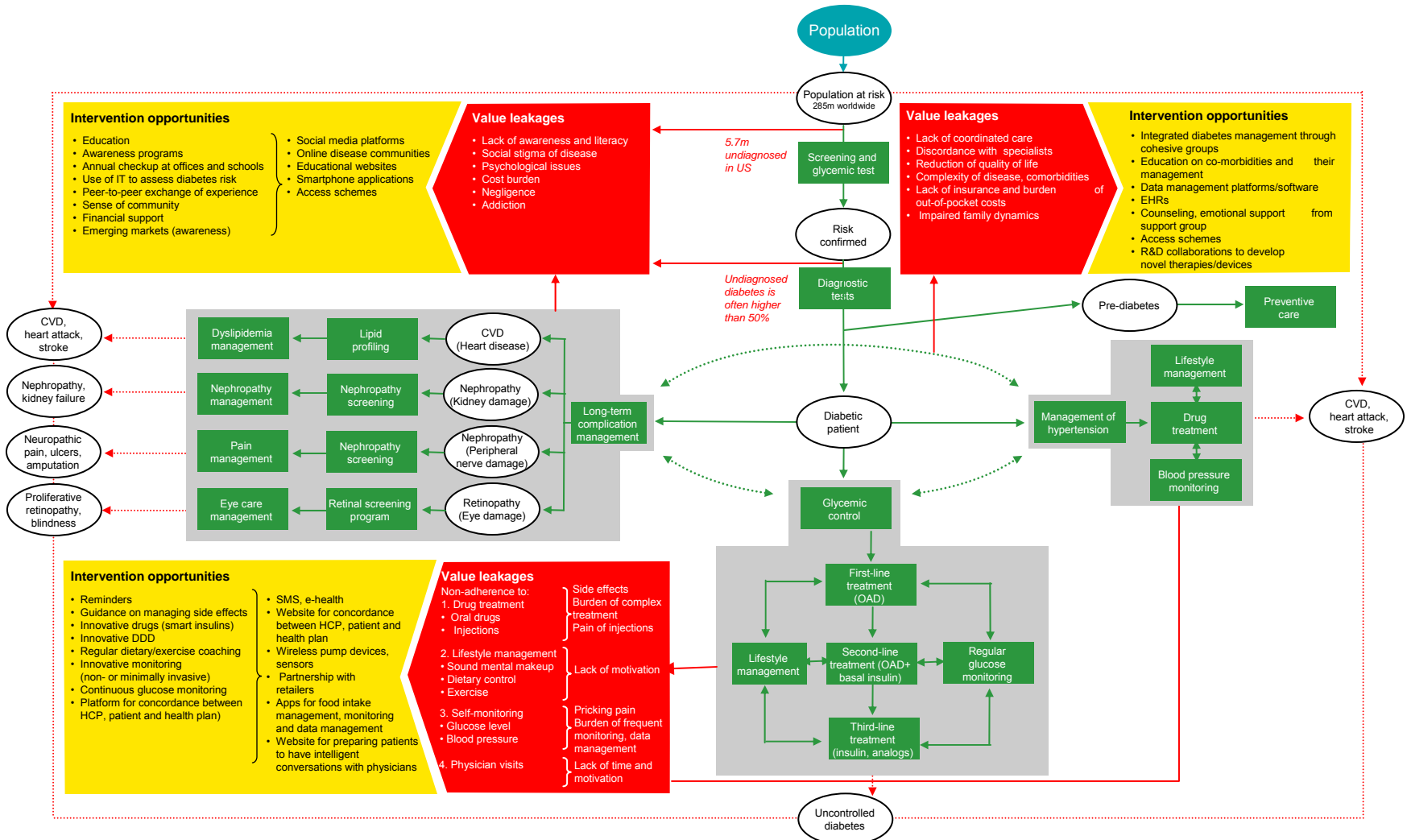


3) System: collective impact



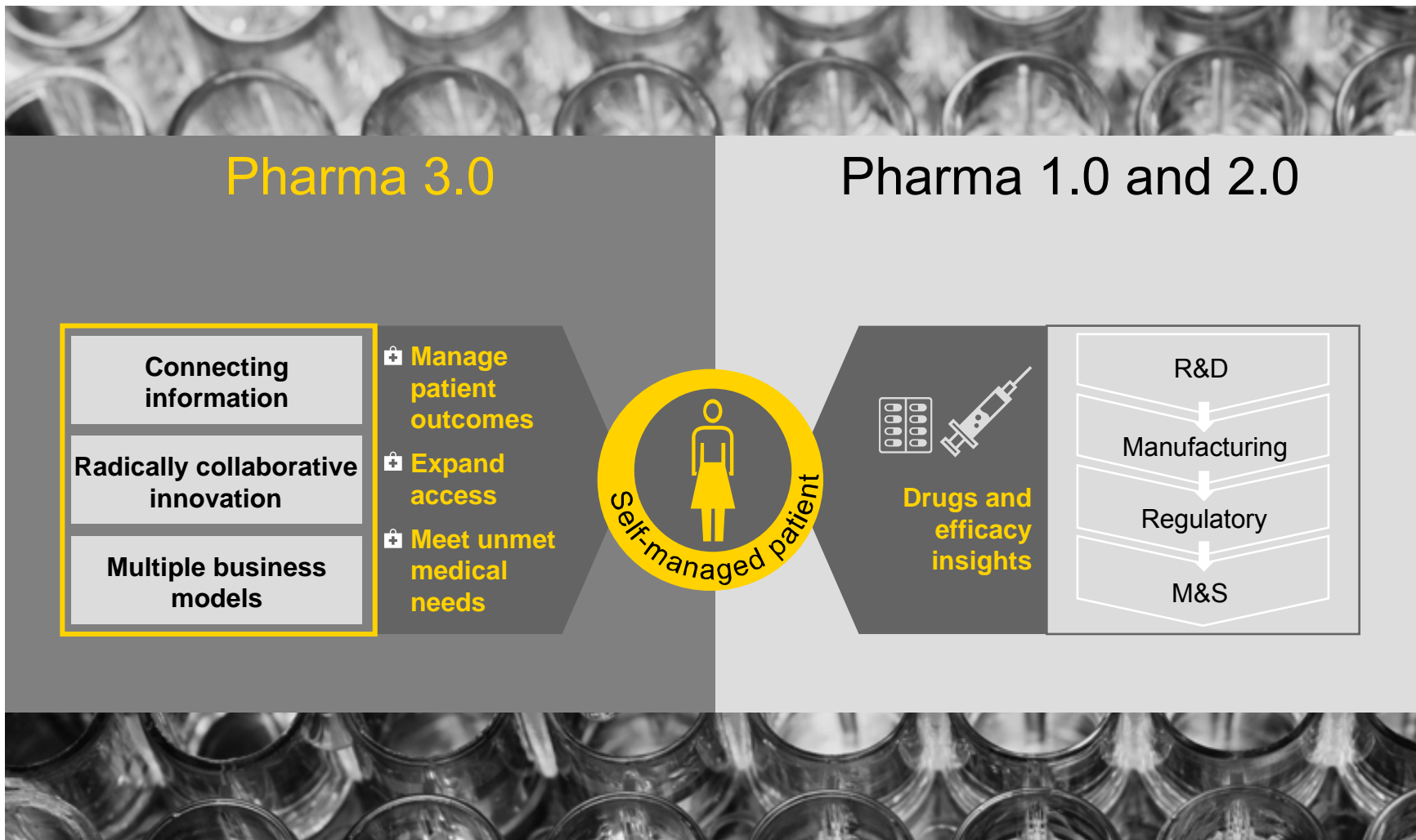
Business model development

Mapping the value pathway



Pharma 3.0

Enhanced core competencies to enable health outcomes



Connecting information

Connect

Big data

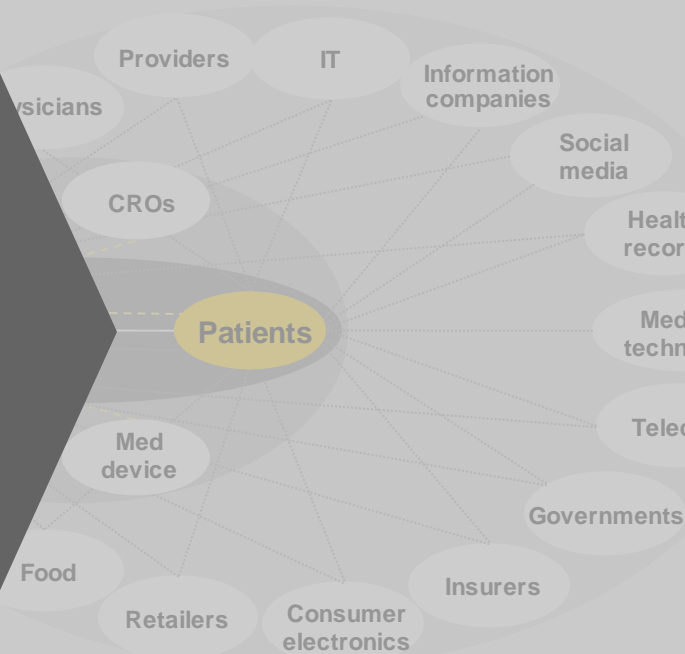
- ▶ R&D functions but also from external relationships becoming increasingly data rich
- ▶ Exponential increase in the quantity of data being created

The internet of things

- ▶ Connected and context aware technologies
- ▶ Generation of real time data

Closed gardens

- ▶ Data increasingly been aggregated in closed, proprietary systems
- ▶ Need to negotiate access to, collect and analyze different kinds of data in various forms



New capabilities

- ▶ To track, store and analyze data
- ▶ To develop insight-enabled interventions at key points in the cycle of care

Aggregators

- ▶ To aggregated data using common language and turn data into insights

Building solutions

- ▶ To develop insightful solutions from data

Information strategy

- ▶ As a new approach to IT
- ▶ IT will be about informing and driving 3.0 strategy

Radical collaboration

Collaborate

New business models

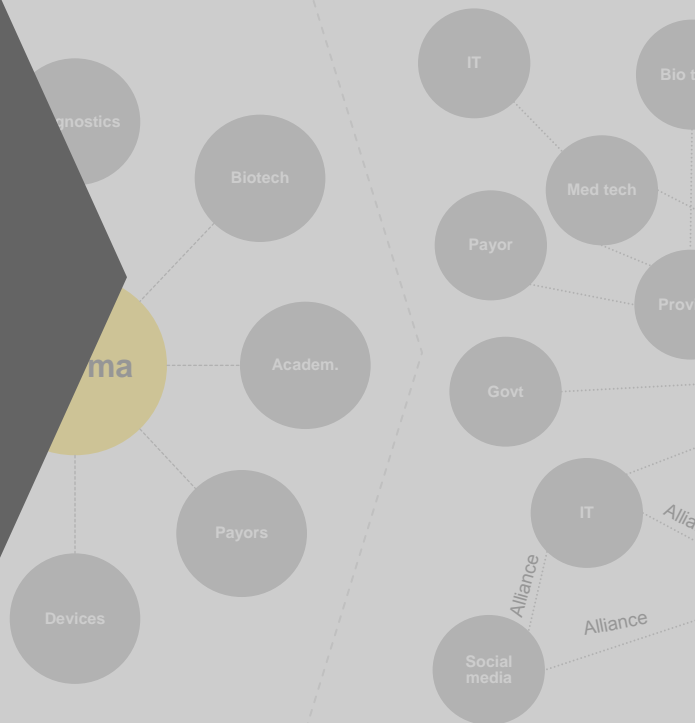
- ▶ ...require a different approach to innovation
- ▶ No single entity will have the full complement of skills, expertise and insights to develop innovative outcomes-based business models

A broken system

- ▶ Innovation will need to be disruptive
- ▶ A focus on outcomes is providing a catalyst for disruptive innovation
- ▶ Assets are in place, need to combine them

0 & 2.0

Pharma 3.0



Rigorous process for R&D

- ▶ Pharma will develop large portfolios of business model experiments

New approaches to IP

- ▶ Pharma will need to learn to contribute assets and IP into new models that they do not entirely control

Community engagement

- ▶ A key driver of success will be the ability to engage with customers and developers in fundamentally different ways.
- ▶ Open partnering and open innovative process, crowdsourcing

Multiple business models

Operate

A multiplicity of business models

- ▶ Diverse new value propositions
- ▶ Heterogeneous customer base
- ▶ Diverse and new channels
- ▶ Emerging enabling technologies
- ▶ A need to experiment

A shift to solutions

- ▶ Allowing to unbundle knowledge from product
- ▶ With models incorporating services and customer insights



A rigorous and systematic approach

- ▶ Use commercial trials to develop and experiment around new offerings

Manage a portfolio of partners

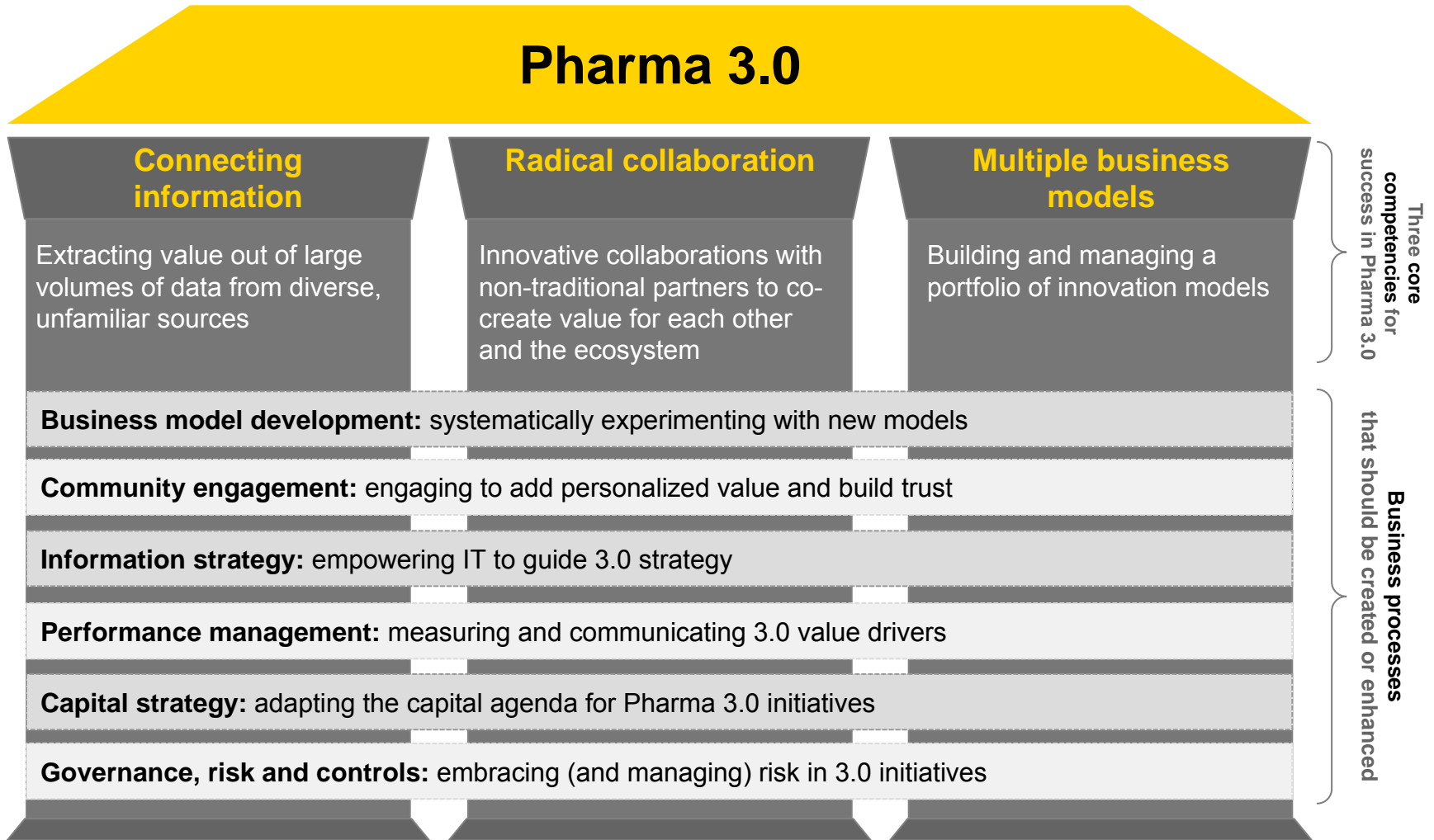
- ▶ Investing in long-term potential of some relationships, partner around specific challenges, bring together complementary skills and needs

Manage performance

- ▶ ...of developing and scaled initiatives
- ▶ Function as a value added private equity firm

Building Pharma 3.0

Six business processes



Business model development

A systematic, scalable process

Not business development by another name

- ▶ BMD does not exist in pharma today
- ▶ Systematic, scalable processes for:
 - ▶ Wide-scale experimentation
 - ▶ Identifying winners, failing fast
 - ▶ Scaling up and commercializing
- ▶ Requires different skills, incentives and mindsets

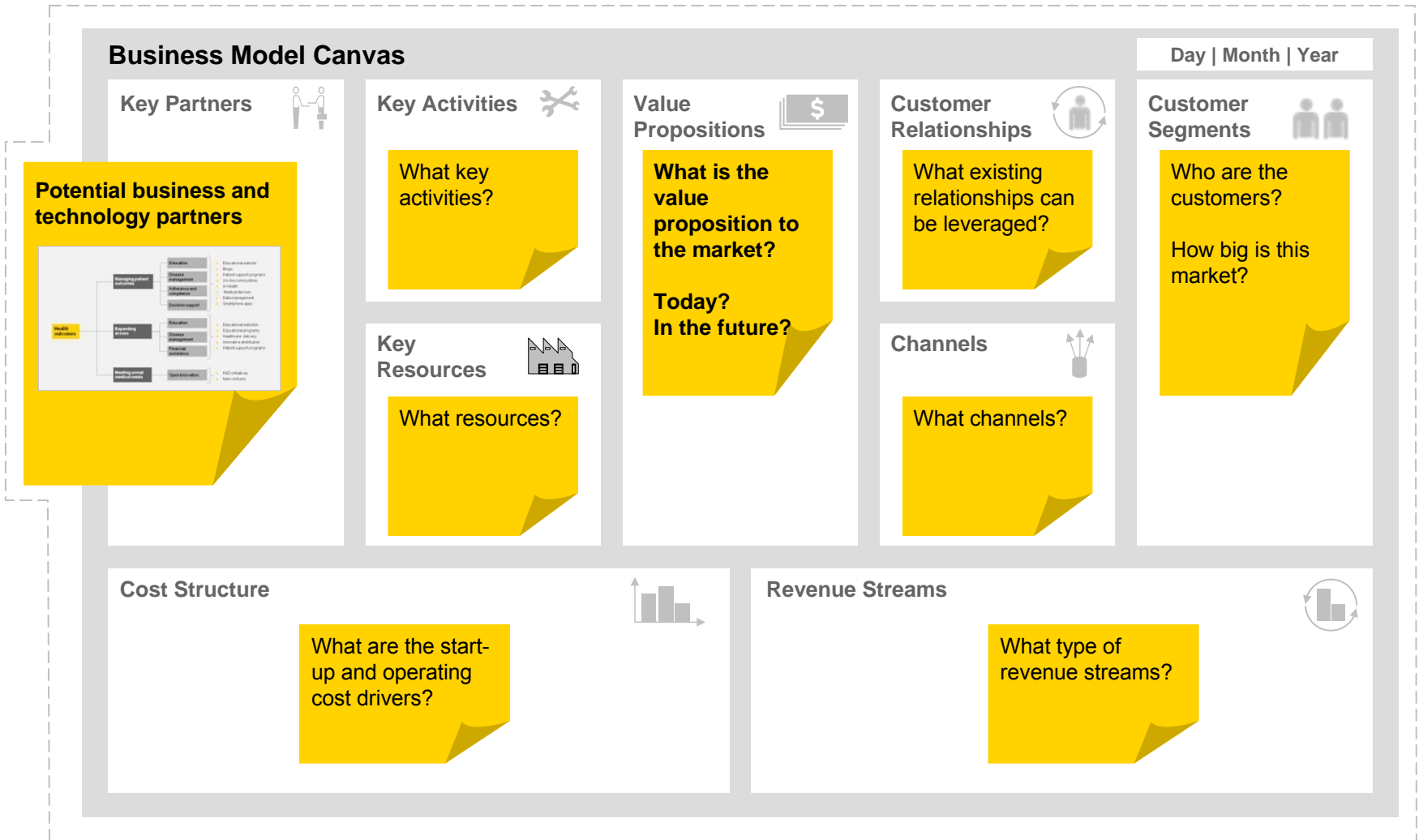
Skills, incentives and mindsets

- ▶ **Appropriate incentives**
- ▶ **Knowledge of:**
 - ▶ Multiple health care systems
 - ▶ New technologies
 - ▶ Regulatory/legal aspects
- ▶ **Customer centricity**
- ▶ **Strategic and financial rigor**

A systematic, scalable process:

- ▶ **Map the value pathway**
- ▶ **Identify value leakages**
- ▶ **Envision solutions and partners**
- ▶ **Determine strategic fit**
- ▶ **Conduct commercial trials; scale up**
- ▶ **Ongoing performance management**

Business Model Canvas



Nudging patient behavior

Communicate clearly!

Account for preferences!

Processing information



Providing a feedback loop, actionable information based on personalized data

- ▶ Personalized to circumstances
- ▶ Made relevant
- ▶ Informing choices and trade-offs

Resisting temptation



Enabling actions-taking while in cold states to help guide behaviors when in hot states

- ▶ Technologies to manage behaviors in hot states
- ▶ Social networks feedback and reinforcement.
- Contracts to lock in behaviors

Behavioral change

Patient



Empowering

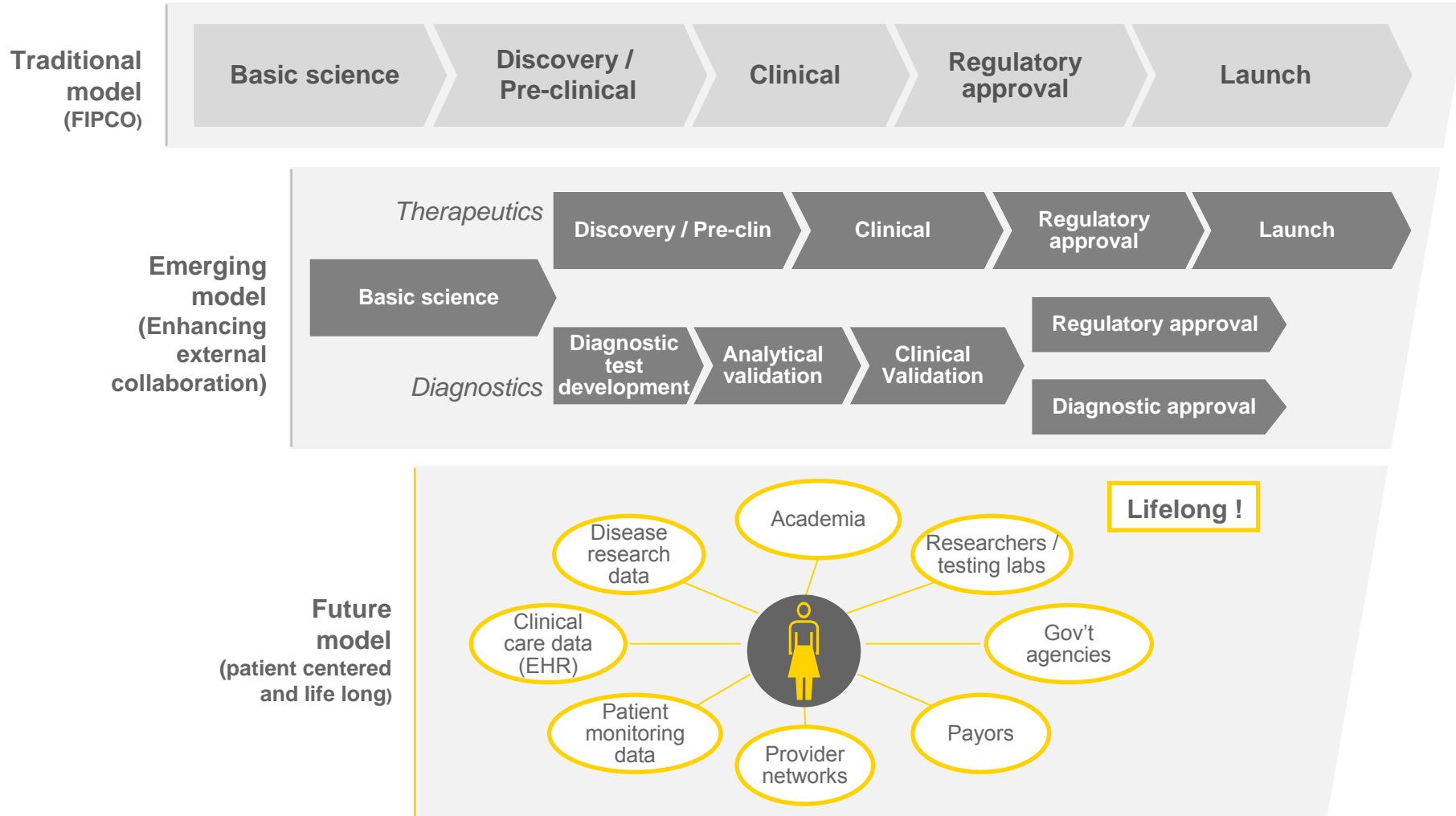
Learn from behavioral economics

Experiment and be flexible

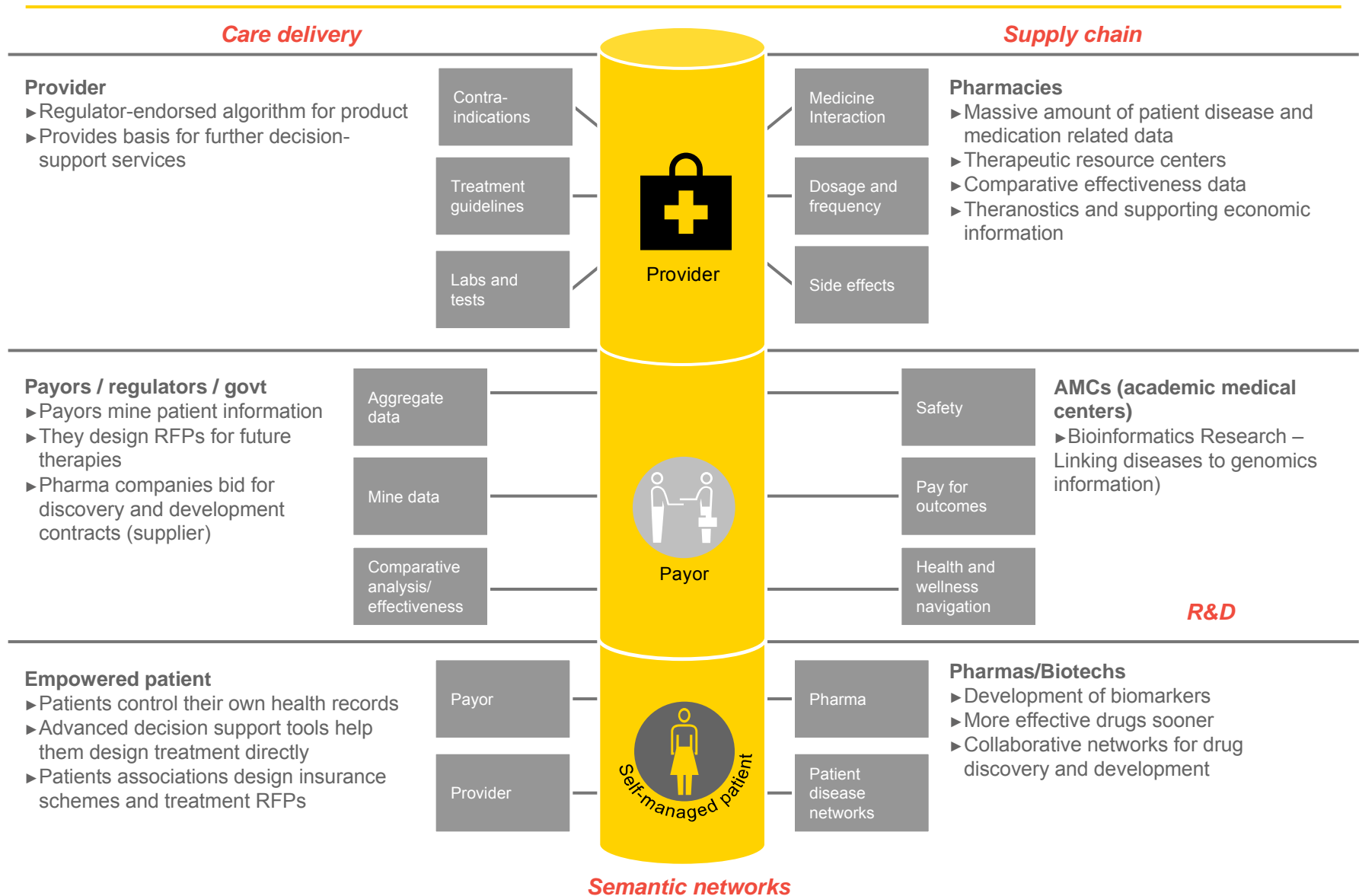
Use new technologies and social media

Implications on R&D value chain

The R&D value chain is shifting from sequential to lifelong and patient-centric



Semantic networks



Selected revenue models

Model	Description	Examples	Success factors	Patient-centric opportunities
Data monetization	<ul style="list-style-type: none"> ▶ Provide discounted/free services ▶ Extract value from customer data 	<ul style="list-style-type: none"> ▶ Zynga ▶ Facebook ▶ Safeway (loyalty cards) 	<ul style="list-style-type: none"> ▶ Platform for collecting customer data ▶ Data mining skills ▶ Trust from customers 	<ul style="list-style-type: none"> ▶ Disease networks: Give patients free care, capture value from lifelong data ▶ Social media: Free access, monetize discussion thread data ▶ Smartphone apps
“Freemium”	<ul style="list-style-type: none"> ▶ Provide basic offering for free ▶ Charge a premium for advanced or special features 	<ul style="list-style-type: none"> ▶ Skype (free Skype-to-Skype calls, charge for other calls) 	<ul style="list-style-type: none"> ▶ Customer expectations of free access ▶ Ability to easily add or subtract features 	<ul style="list-style-type: none"> ▶ Smartphone apps: Limited features for free versions, charge for full versions.
Subscription /membership	<ul style="list-style-type: none"> ▶ Give customers access for a specific time period in exchange for a flat subscription fee 	<ul style="list-style-type: none"> ▶ Netflix ▶ Costco 	<ul style="list-style-type: none"> ▶ Low marginal costs ▶ Variability in customer usage over time 	<ul style="list-style-type: none"> ▶ Capitated models: Companies agree to receive a flat payment per patient for a certain period. ▶ Behavioral incentive programs: Patients or employers pay monthly fee for behavior modification programs.
Market exchange	<ul style="list-style-type: none"> ▶ Connect multiple buyers and sellers ▶ Create transparency ▶ Revenue from commissions, transaction fees, etc. 	<ul style="list-style-type: none"> ▶ eBay ▶ Priceline ▶ Yelp ▶ Groupon 	<ul style="list-style-type: none"> ▶ Inefficient markets 	<ul style="list-style-type: none"> ▶ Transparency enablers: Websites with info on quality and prices (▶ Online clearinghouses: e.g., for providers to sell excess capacity

Getting to 3.0

Disrupt and engage

Disrupt the value network

Revisit incentives and metrics

- ▶ Health outcomes based incentives
- ▶ Standards and metrics to measure health outcomes
- ▶ Economic value for externalities to set price signals
- ▶ Baseline to compare interventions

Develop Standards

- ▶ Regulatory
- ▶ Value mining
- ▶ Interoperability of data

Evolve Cultures and mindset

- ▶ Trust
- ▶ Incentives to encourage openness, transparency and impartiality
- ▶ Science is first

Articulating strength

- ▶ Knowledge about the products
- ▶ Understanding of cycle of care
- ▶ Expertise in clinical trials
- ▶ Knowledge of disease states
- ▶ Familiarity with regulatory
- ▶ Familiarity with payers

Addressing conflicts of interest

- ▶ Investing in long-term potential of some relationships, partner around specific challenges, bring together complementary skills and needs

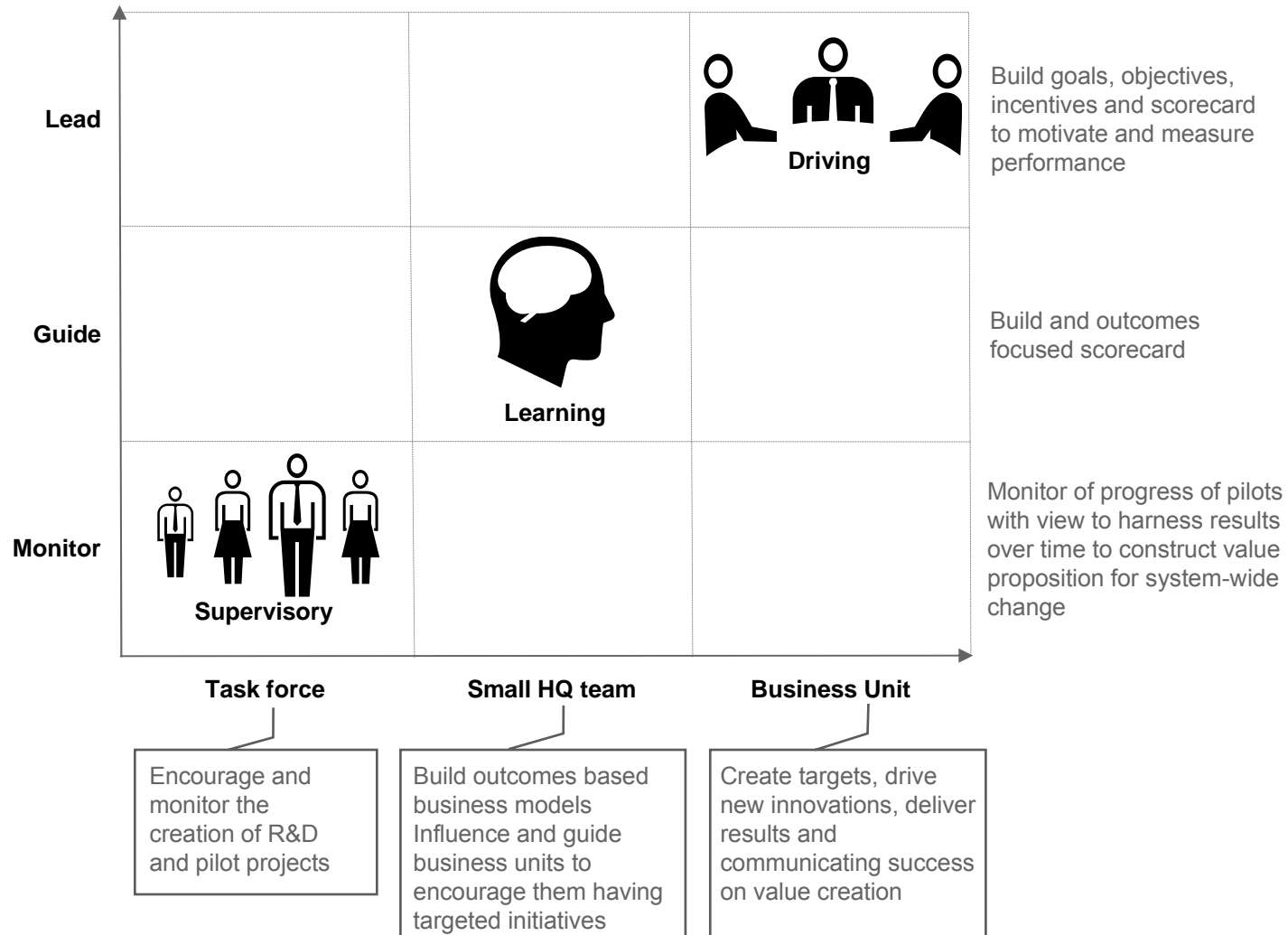
Take action to build trust

- ▶ Committing to act in ways that demonstrate new approaches and mindsets for co-creating value with partners
- ▶ Realign internal incentives and processes

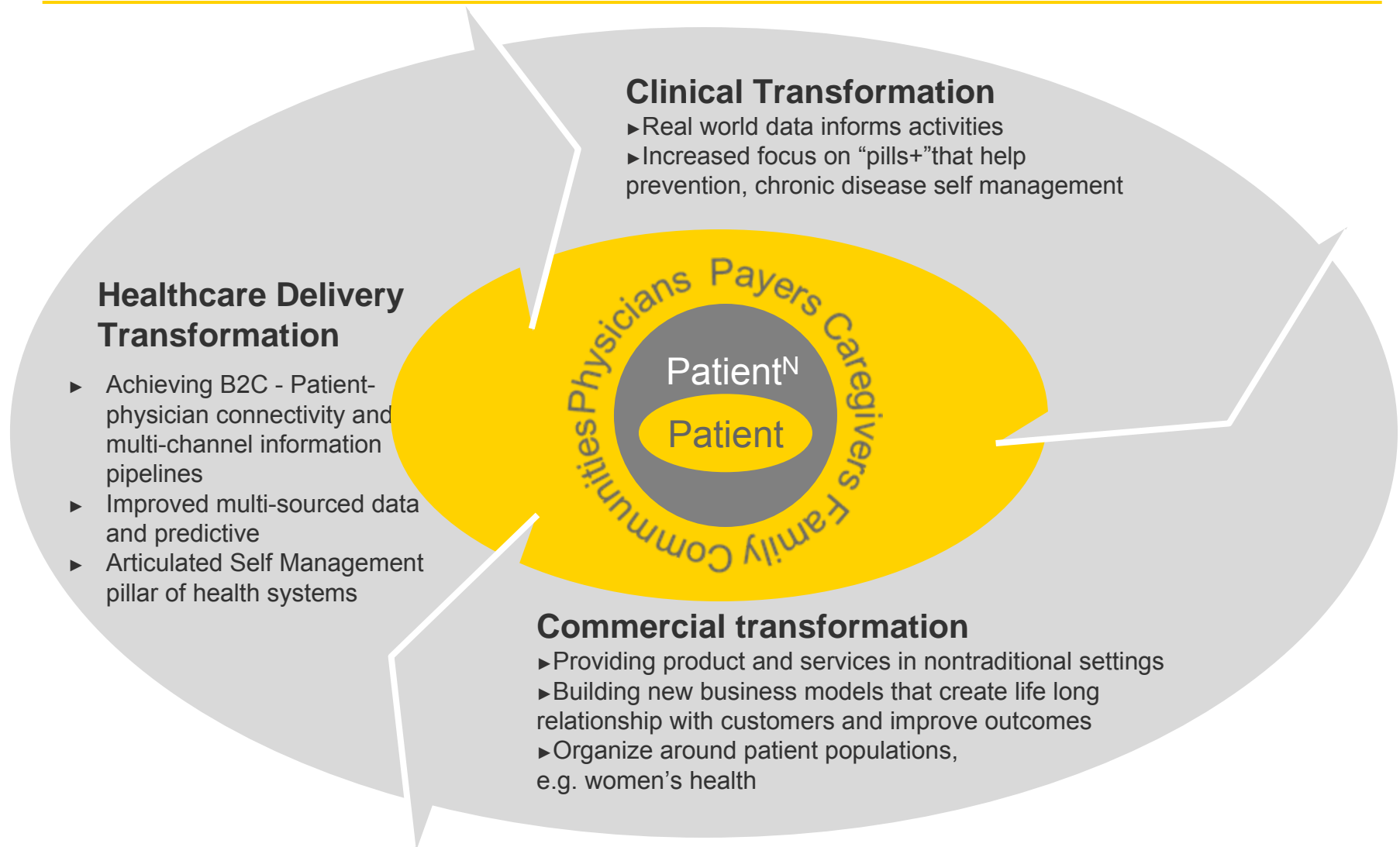
Engage the ecosystem

Getting to 3.0

Change models



Innovation for Life Sciences Companies – a Virtual Circle



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