



HMMC

May 23, 2019

***“It’s the innovation, stupid!”***

***Adam J. Bock, MBA, PhD***

# Plan of action

Quick intro

Let's innovate and see what happens (I think we'll learn something...)

Panel intro

Panel Q&A

# Key takeaways

- Innovation value determined by stakeholders, not the innovator
- Manage innovation across the organization

# Health care / medicine is changing



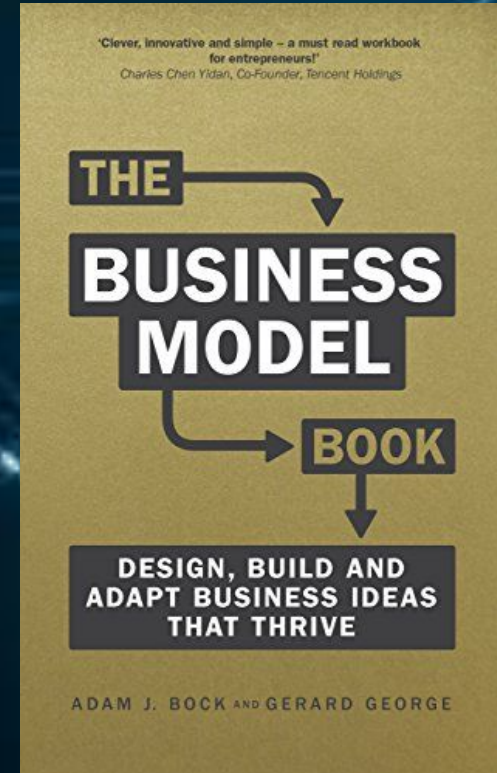
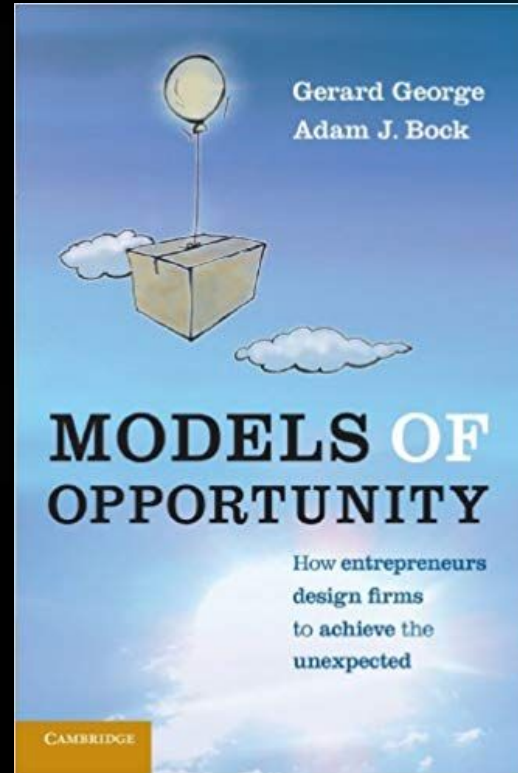
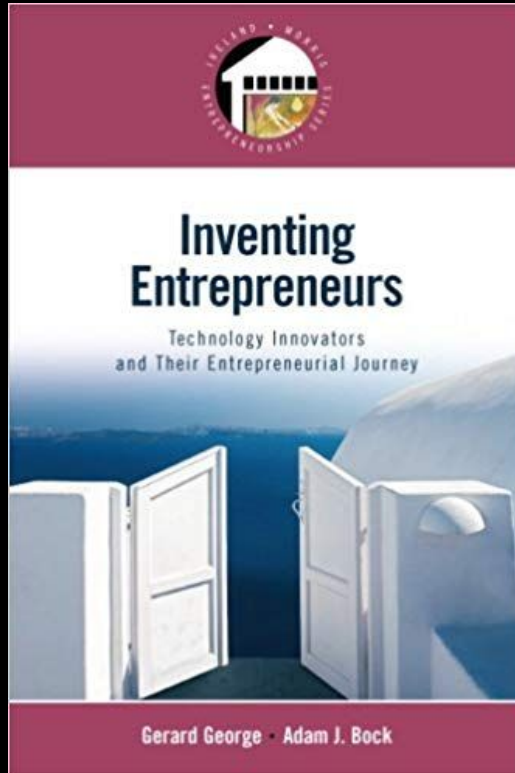
Sometimes, complex problems  
are actually simple



Hypothesis:  
“It’s the innovation, stupid!”



I've been studying this for > 10 years



# I've jumpstarted commercialization





# Even inventorship on a medical device patent

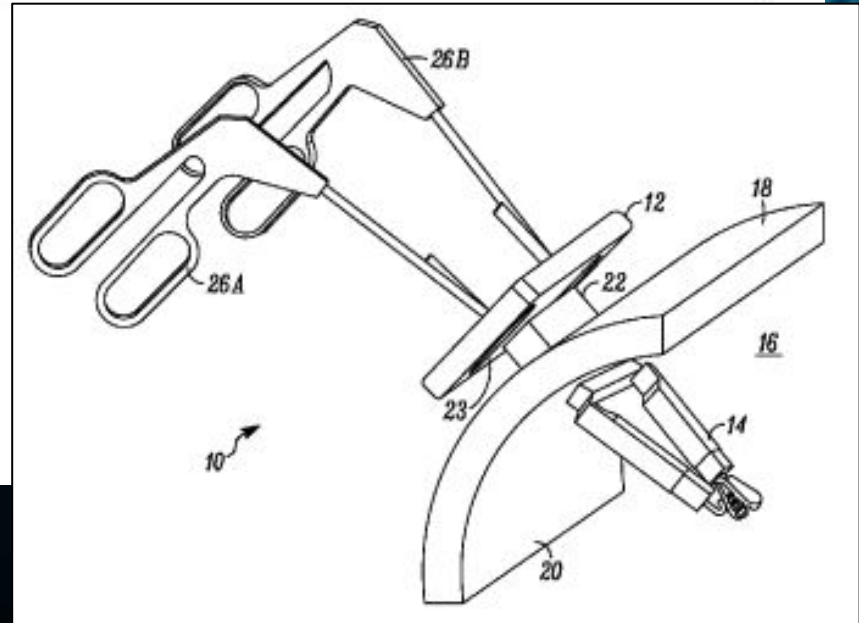
(12) **United States Patent**  
**Farritor et al.**

(10) **Patent No.:** **US 9,579,088 B2**  
(45) **Date of Patent:** **Feb. 28, 2017**

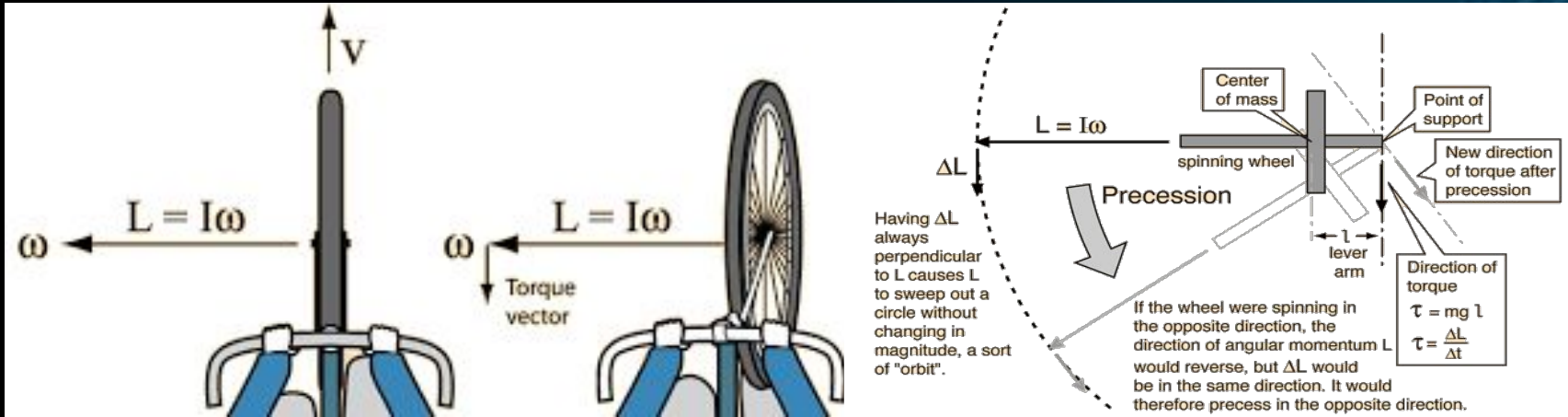
(54) **METHODS, SYSTEMS, AND DEVICES FOR SURGICAL VISUALIZATION AND DEVICE MANIPULATION**

(75) Inventors: **Shane M. Farritor**, Lincoln, NE (US);  
**Mark Rentschler**, Omaha, NE (US);  
**Amy Lehman**, Seward, NE (US);  
**Nathan A. Wood**, Papillion, NE (US);  
**Adam Bock**, Sun Prairie, WI (US);  
**Reed Prior**, Waltham, MA (US)

(73) Assignee: **Board of Regents of the University of Nebraska**, Lincoln, NE (US)



# But *teaching* $\neq$ *learning*



*Not the best way to teach  
someone how to ride a bicycle...*

So, let's *innovate!*

Write down one thing that would:

*improve the experience  
of attending a professional conference*

- Minimum 5 words, no more than 1 sentence
- Has to be reasonable / possible



eureka!  
innovation!

# Round 1: Network!



- Talk to the 3-4 people nearest you
- *If one of their innovations is better than yours, give your post-it to that person*
- An innovation must have at least one follower to go to Round 2
- 3-4 minutes

# Bad news and good news

Bad news: There is no Round 2

Good news: You have generated amazing innovations-- tell me about a couple of them!

# “Winning” innovations!

- Editable slide pre-conference
- Pen drive with all content
- 5 takeaways
- Buddy system for new members
- List attendees



# “Winning” innovations...

- Not guaranteed to be the best possible
- Not guaranteed to be the best *available*
- Not guaranteed to *succeed in market*



# Not guaranteed to be best possible

- Time constraints
- Resource constraints
- Sampling bias





# Not guaranteed to be best *available*

- Ease of communication
- Communication skill of promoter
- Legitimacy of promoter
- Selection bias (shyness, discrimination)
- Initial conditions
- Path dependency / randomness



# Not guaranteed to succeed in market

- Existing standards
- Requirement for behavioral change
- Does not address actual customer need



# Is that how innovation happens at your organization?

- **Reactive** problem-solving
- Driven by the most **confident voices**
- **Incremental** product change
- Based on **innovators' interests**
- **Stage-gating** dependent on factors *other* than the innovation's value to stakeholders (e.g. customers)

# Dementia vs. delirium diagnosis in ICU / ER

Team @ University of Edinburgh Royal Infirmary

Entrepreneurial-- asked ICU/ER docs for ideal characteristics:

- Rugged / drop-safe
- Spill resistant
- Simple / dedicated controls

Voila!



Edinburgh  
Delirium Test  
Box (EDTB) for  
the Intensive  
Care Unit

Can you find the device in these pictures?



# Know your stakeholder!

Who administers the cognitive tests?

Who makes the purchasing decisions?

What are the real *behavioral* issues in the use context?

- Limited space in ICU/ER for more gear/equipment
- Ruggedness doesn't matter if the "device" has other uses
- Integrated instructions and medical records

Can you find the *ideal* device in this picture?

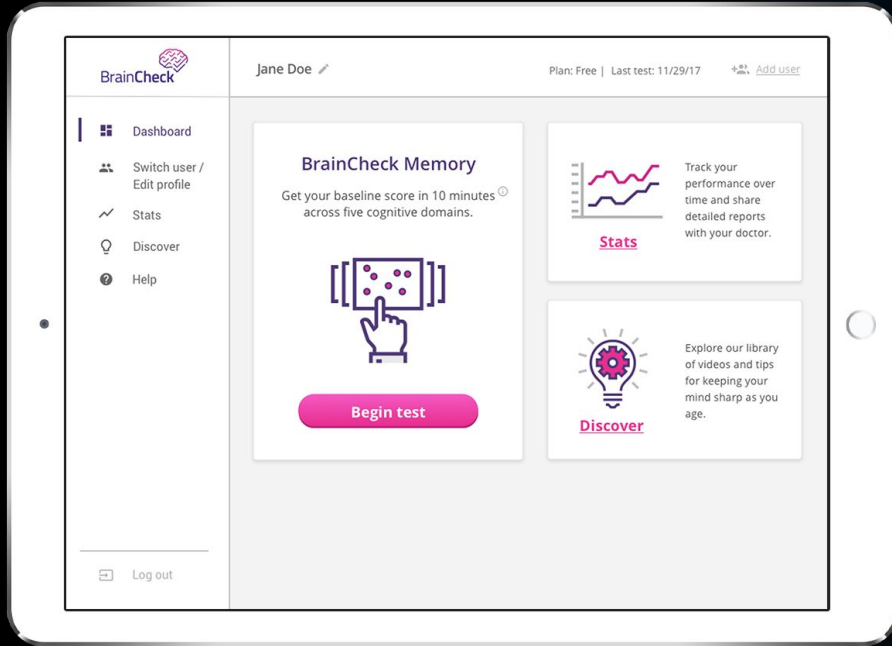




6 years later...

“A current project is investigating the use of Android smartphone technology to administer EDTB-ICU tests in the ICU...”

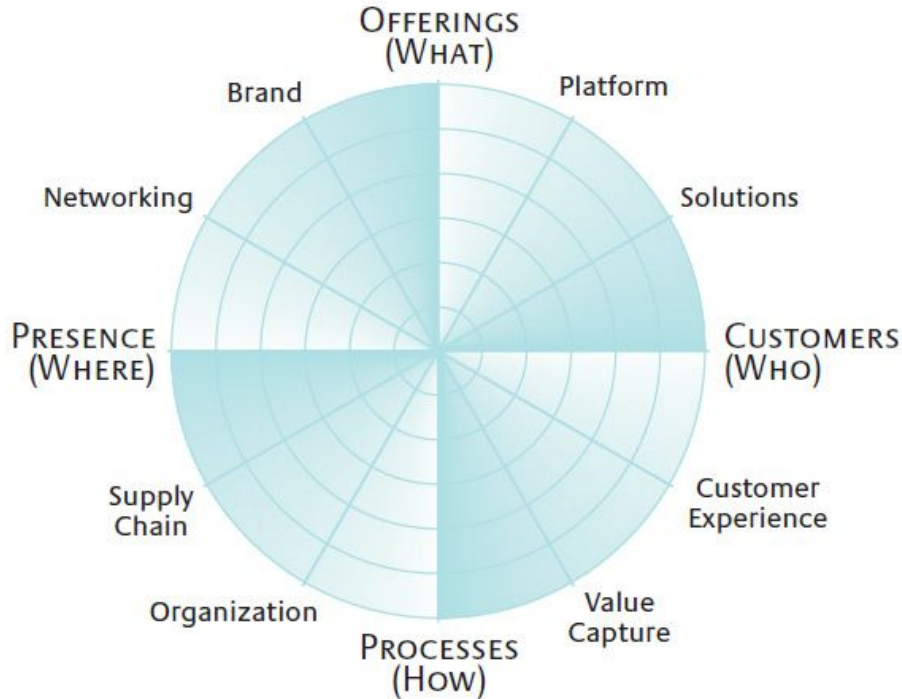
# So now they're only 5 years behind...



# Key takeaways

- Innovation value determined by stakeholders, not the innovator
- Manage innovation across the organization

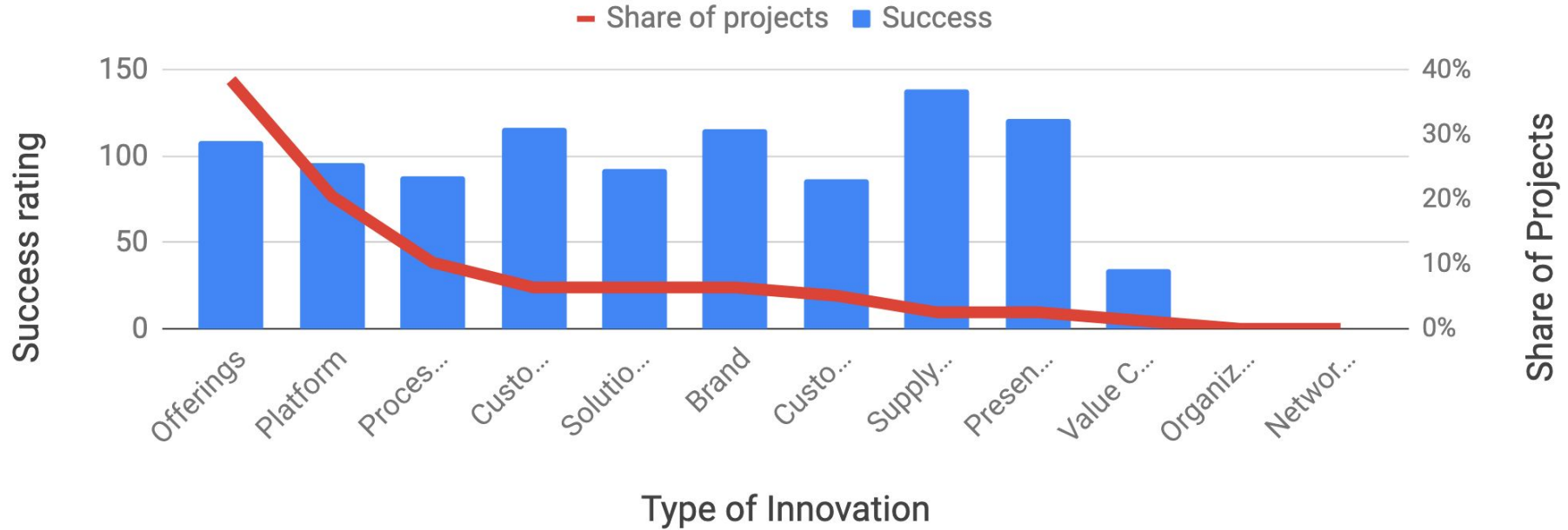
# Innovation across the organization



Sawhney, M., Wolcott, R. C., & Arroniz, I. (2006).  
The 12 different ways for companies to innovate.  
*MIT Sloan management review*, 47(3), 75.

# Innovation audit at Wisconsin CPG firm

Success and # of projects by Innovation Type



# Who “owns” innovation?

“Innovation falls under marketing, which would make sense, except that marketing relies on reports and doesn’t do anything with actual customers. [The R&D team] reactively serves at least 4 different internal and external stakeholders, so we rarely do observation of actual customer behavior.”

- CPG firm R&D manager

# Innovation across the organization...

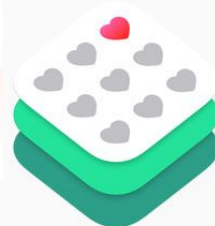


# Because healthcare is changing...

Who will make the purchasing decisions in the emerging framework of data-driven, AI-informed, outcome-based healthcare?



HAVEN



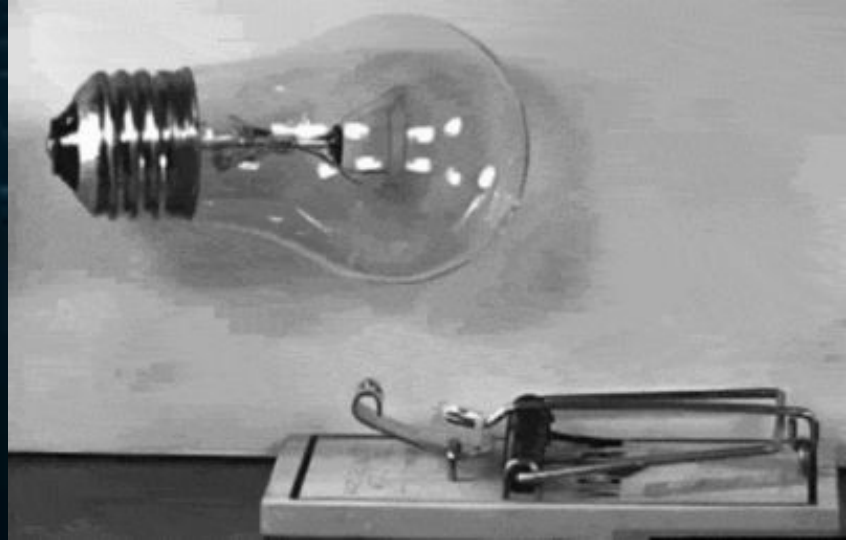
ResearchKit



CareKit



“It’s NOT the innovation!” (anymore...)



It's the management of innovation...

... across the whole organization...

... to increase value creation and capture...

... based on observed stakeholder needs.



# Thank you

Adam J. Bock, MBA, PhD

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This presentation:

[www.tinyurl.com/2019hmmc](http://www.tinyurl.com/2019hmmc)

# Our distinguished and knowledgeable panel

**Vicki Hill**, Director, Performance Excellence Consulting, careC2 at Leidos; former Vice President Clinical and Operations UW-Health



**Jennifer Mueller**, Vice President and Privacy Officer at Wisconsin Hospital Association Information Center



**Tom Westrick**, VP: Chief Quality Officer, Head of Regulatory Affairs, and Global Research process at GE Healthcare





# Bottom-up innovation: Metalysis

- Electrolytic technology which can reduce metal oxides and ores into pure metals and alloys.
- Operates at lower temperature and lower energy consumption than traditional melting technologies because reduction takes place in the solid-state.
- Inexpensive components and no toxic by-products.



## Debby's story

Annual internal innovation competition

Hired as a cleaner, Debby submitted an entry for a new way to clean out fabrication molds because it took two full days to clean them out (Weds - Fri)

None of the scientists or managers had concerned themselves with clean-up after experiments or test runs...

# Outcome

Cost: purchase of ultrasonic cleaner and +5% energy

Doubled test run / production capacity by avoiding bottleneck mid-week

Debby was the only “stakeholder” who recognized that the innovation opportunity wasn’t the production process, it was the time bottleneck between production processes.

[Debby hired as “technician” to replace PhD-level employee...]

