What will be the most pressing problem in New York in 2000?

Source: Michael Crichton
The Biggest Disruption in the History of Mankind?
"Printed books will never be the equivalent of handwritten codices…"

In "In Praise of Copying" by 15th-century monk Trithemius
1 iPhone6 could guide 120 million Apollo Spacecraft to the moon simultaneously.
Disruptive Innovation
Disruptions

Incumbents feel threatened

These activities almost define when Disruption is occurring

Work to keep the existing infrastructure in place

Point out that quality is subpar
Radio

"The wireless music box has no imaginable commercial value. Who would pay for a message sent to nobody in particular?"

Heads of RCA in response to David Sarnoff's pitch for investment in radio
“TV will never be a serious competitor for radio because people must sit and keep their eyes glued on a screen; the average American family hasn't time for it.”

The New York Times, 1939
Telephone

What use could this company make of an electrical toy?

William Orton, President, Western Union when asked by Alexander Graham Bell to buy his struggling telephone company for $100,000
Who the hell wants to hear actors talk?
Personal Computers
There is no reason for any individual to have a computer in their home.

Kenneth Olsen, founder
Digital Equipment Corp.
1977
Steve Ballmer, CEO, Microsoft
April 30, 2007
Aviation

“There will never be a bigger plane built.”

Boeing Engineering, 1933

Boeing 247
Public Transportation

uberX
THE LOW-COST UBER

better faster cheaper...than a taxi
Enabling less expensive people to do things that were previously unimaginable has been one of the fundamental engines of economic progress

and the established health care institutions have fought that engine tooth and nail.

Will Disruptive Innovations Cure Health Care? CM Christensen, R Bohmer, and J Kenagy
http://hbr.org/web/extras/insight-center/health-care/will-disruptive-innovations-cure-health-care
Healthcare: Resistance to Quantitative Methods in Medicine

Not surprisingly, outraged [practitioners] questioned Louis's methods.

[One], for example, warned that mathematical calculations threatened to substitute "a uniform, blind and mechanical routine for the action of the spirit and individual genius of the [practitioners] artist."

-Research on the Effects of Bloodletting (1835) in Millenson (1997) Demanding Medical Excellence: Doctors and Accountability in the Information Age
“Nurses’ knowledge of diagnosis is pathetically poor,” reported Professor Hugh McGavock, visiting professor of prescribing science at the University of Ulster. “It takes medical students five years to be competent to make a differential diagnosis. Only a country with not enough doctors would go down this cheapy line.”

The British Medical Association warned that the extension of prescribing powers to nurses “is irresponsible and dangerous.” The British Medical Journal echoed this sentiment, stating that the “competence of nurse prescribers continues to be called into question.”

The campaign to give more primary-care duties to nurse practitioners faces headwinds across the country. Physician groups continue to resist sweeping measures that would expand the allowed scope of practice for licensed nurses with advanced medical training.

Last year, Virginia passed a significantly scaled back measure that still requires physicians to supervise nurse practitioners, who usually have two years of postgraduate education. A 2010 version of the bill, which drew the ire of the Medical Society of Virginia, was defeated. Some believe a compromise is a matter of choice, while others feel that doctors are simply not ready to share medical knowledge with nurses. "It's a turf war," said Dr. John Butler, chief of the Virginia Medical Board.

"The issue has gone before the legislature more than 15 times," Butler told Modern Healthcare. "Every time, we've been opposed. We don't feel it's an issue for nurses. We think the medical community has the expertise to handle these matters. But for some reason, they're moving forward with the legislation. Our primary goal has been to get it in the hands of a public employee who doesn't have a conflict of interest. We don't want the egos of doctors to be involved in the decision-making process."

Butler said the debate has been focused on the idea of giving nurses the ability to fill in a doctor's absence. "We think it's a bad idea," he said. "It's going to cause a lot of problems."

Some nurses who have completed the training are more optimistic about the legislation. "I think it's a great idea," said Sarah Black, a nurse practitioner in Virginia. "It's a way to bring more people into the medical field."
Health care needs to be transformed

Less expensive professionals to do more sophisticated things in less expensive settings.
The Least Expensive Provider
Is No Provider
Online Tools
Four Types of Online/Mobile Tools

Seeking Information Online

- Information
- Engagement, Screening, Assessment
- Social Support
- Intervention
Depression Health Center

Getting Help for Depression

When you have depression, it's more than feeling sad. Intense feelings of sadness and other symptoms, like losing interest in things you enjoy, may last for a while. Depression is a medical illness, not a sign of weakness. And it's treatable.

To find out more, answer these questions.

**Step 1**
- Feeling depressed, but haven't talked to a doctor?
- Just recently diagnosed and don't know what to do?
- Currently treating your depression?
- Stopped your depression treatment?

**Step 2**

**Step 3**

Next >

I Think I'm Depressed ▶
How to get help.

I Just Got Diagnosed ▶
Your next steps.

I'm Getting Help ▶
What to expect from treatment.

I've Stopped My Treatment ▶
How to get back on track.
You're going to be okay, we're here to help.

How Does Technology Interrupt our Minds?
3 Ways It Impacts Our Life

News Headlines
- ADHD Risk in Children Linked to Allergies, Asthma
- Close Grandparent-Adult Grandchild Bond Brings Mental Health Benefits
- Abused Girls May Have Obesity Issues in Adulthood
- Perception of Online Strangers Varies Depending on Circumstance
- Big Family Can Reduce Risk of Divorce
- Empathy Linked to Age Rather than Species

What's Popular
- The Psychology of Workplace Leadership: Strong, Steady Transformation
- 10 Tips to Cultivate Your Creativity
- Dr. Phil and Brian Williams: Will They Apologize?
- Common mistakes when arguing
- 15 Hints for Effective Communication
- 3 Ways that Technology Interrupts our Minds
- Paying For Treatment: Barriers And 4 Ways Around Them
- ADHD And The Self Fulfilling Prophecy Of Self Doubt

What's New
- 6. "Ain't Nobody Got Time For That!" - A...
- It's Not That You Fight, but How You Fight...
- ADHD And The Self Fulfilling Prophecy Of Self Doubt
- 10 Tips to Cultivate Your Creativity
- Paying For Treatment: Barriers And 4 Ways Around Them
- Common mistakes when arguing
- Poem: Difference
- 15 Hints for Effective Communication

Subscribe to Our Weekly Newsletter

Daytrana: A Long and Winding Road to Approval

From Psych Central Professional
Treatment and Services

Most people diagnosed with mental illness can experience relief from their symptoms by actively participating in an individual treatment plan. Numerous treatments and services for mental illnesses are available. The choice and combination of treatment and services selected depends on individual cases, the severity of symptoms, the availability of options, and decisions determined by the individual, often in consultation with their healthcare provider and others. Most people with mental illness report that a combination of treatments, services, and supports works best to support their recovery.

For more in-depth information about NAMI’s views on policy topics check out NAMI’s advocacy page.

Medications

Mental health medications do not cure mental illness. However, they can often significantly improve symptoms and help promote recovery and are recognized as first-line treatment for most individuals.

Specific Medications

A list of information regarding specific medications.

Long-acting Injectable Antipsychotic Medications (LAs)

LAs are an alternative to oral administration of medications.

Ask the Psychiatric Pharmacist

NAMI is pleased to work with the College of Psychiatric and Neurologic Pharmacists to bring you a series called Ask the Psychiatric Pharmacist.

National Institute of Mental Health

Information about psychotropic medication from NAMI.

U.S. Food and Drug Administration Center for Drug Evaluation and Research

This federal agency’s website has consumer information on drugs approved by the FDA since January 1998.

Prescription Drug Assistance

Information on government programs, non-profit organizations, and pharmaceutical companies offering free or low-cost medication.

Services

An array of mental health services and supports are important to ensure recovery for most people living with mental illness.

Case Management

A case manager coordinates services and supports to help you live successfully in the community.

Employment

Supported Employment

NAMI’s fact sheet on supported employment.

Hospitalization

Psychiatric hospitals are designed to be safe settings for intensive mental health treatment.

Housing

Lack of safe and affordable housing is one of the most significant barriers to recovery for people living with mental illness; a safe place to live is essential to recovery.

The Continuum of Housing refers to a full range of housing options, from supportive housing for the homeless to traditional homeownership and everything in between.

Appropriate Housing: Four Criteria

Regardless of the type of housing options chosen, it must meet four criteria in order to be appropriate and effective.
"Bad news, it's curiosity"
Four Types of Online/Mobile Tools

Home Testing and Measurement

- Information
- Engagement, Screening, Assessment
- Social Support
- Intervention
Home Testing and Measurement
The first recorded use of a pregnancy test actually occurred in 1350 B.C.E. In 1963, that test was evaluated and found to be accurate 70 percent of the time. (Kennedy, 2012)
All-in-one. Whole-hearted.

The Smart Body Analyzer measures weight, body composition, heart rate, and air quality.

Learn More
Blood Pressure Monitor

Easy and precise self-measurement of your blood pressure with your iPhone, iPad or iPod touch.

Discover

$129.95

Blood pressure and heart rate

The Withings Blood Pressure Monitor offers all the information and insights you need to take control of your blood pressure.

Learn more »

Tailor-made for iOS

Specially created for iPhone, iPad and iPod touch, just plug it in and press to launch the measurement.

Learn more »

Your history, on hand

It automatically saves and displays your results for easy tracking and evaluation. Keep your history in your pocket and access it anywhere, anytime.

Learn more »

Share for greater care

Email your measurements history with a tap to keep your doctor in the know and seek professional advice.

Learn more »
Proteus Smartpill

Ingestible sensor-enabled tablets
Relay information to a patch on the body.
Proposal to Insert Proteus Smartpill Technology to Abilify

FDA asked to consider adherence sensor on Abilify
Ethical Concerns

• Informed Consent and Confidentiality.
• Secure? Could it be hacked?
• For other illnesses? Who gets the signal? Employer? Judicial system?

http://wgbhnews.org/post/new-smart-pill-raises-ethical-questions
Physical Fitness and Training
BAND + APP + YOU = THE UP SYSTEM

UP® is a system that takes a holistic approach to a healthy lifestyle. The wristband tracks your movements and activity in the background. The app displays your data, so you can track things like meals and mood, and delivers insights that keep you moving forward.

YOU, AT

Know what's happening with you, instantly. Your sleep, your activity, what you're eating. The Home Screen is your daily dashboard. A way to quickly check in with your progress and see what your friends are up to.
Four Types of Online/Mobile Tools

Online Peer Support

- Information
- Engagement, Screening, Assessment
- Social Support
- Intervention
What's on your mind?

Get through your troubles on Big White Wall. Be safe, open and anonymous. 95% of members say they feel better as a result.

What's on others' minds?

trauma

- Serving personnel
- Veterans
- Their families
- Select one option and join
The Leading Healthcare Behavior Change Platform Company

Members
Join support communities to achieve your health goals.
How it works ▶

Employers
Reduce healthcare costs, improve productivity, and accelerate return to work.

Health Plans
Create market differentiation and boost participation in programs.

Providers
Maintain engagement, support patients and alumni, and reduce readmissions.
Four Types of Online/Mobile Tools

Online Treatment Tools

- Information
- Engagement, Screening, Assessment
- Social Support
- Intervention
E-therapies
What Can We Learn From These Guys?
Digital Natives... want it their way
Smartphones = Smart kids?

• 92% 13-17yo online daily (1)
• 24% 13-17 online “almost constantly” (1)
• 56% 8-12 yo (2)
• 63% text daily (2)
• 75% text while driving (2)
• 28% inappropriate pics (2)

(2) https://www.lookout.com/resources/reports/smartphone-family-guide
Amazingly...

25% of children ages 2-5 have a smartphone
40% of children 6-9 have one

http://foxnewsinsider.com/2013/08/05/new-study-25-percent-kids-two-and-under-own-smartphones#ixzz2eM7Ze4J3
The sort of bad news

 Teens and young adults use social networking sites and mobile technology to express **suicidal thoughts and intentions** as well as to reach out for help.

The Bad News

When asked how they seek help

Least common responses:

• Talking to a health-care provider
• To a blog
• Calling a suicide prevention hotline
• Posting to an online suicide support group.

Isn’t this what we do?
CCBT and Clinical Social Media
Feeling down or anxious? Beating the Blues 24/7 can help...

Beating the Blues® is an effective treatment for people feeling stressed, depressed, anxious or just down in the dumps. Based on Cognitive Behavioural Therapy, the course is made up of 8 online sessions which last approximately an hour and help you to understand the link between how you think and how this influences your feelings and behaviours. The program teaches strategies to help you cope better in the short term and workable skills for life so that you can face the future with confidence.

An Effective Treatment

You Are Not Alone

Depression and anxiety are extremely common. In fact, one in every five people is affected at some time in their lives. Depression and anxiety often go hand in hand, but they can occur alone too.

An Effective Treatment Method

Cognitive Behavioural Therapy (CBT) has been used successfully for many years to treat anxiety and depression. Results are quick and extremely effective if people work through the program and carry out weekly projects in between sessions.
In clinical trials, 3 times increase in user engagement than competitor programs, driving higher recovery rates.

WE OFFER ONLINE SOLUTIONS

- Anxiety
- Depression
- Chronic Illness
- Eating Issues
- Stress

Designed by clinicians, for clinicians
HEALTHY BEHAVIOR THROUGH TECHNOLOGY

Inflexxion® develops scientifically-based, interactive technologies that help people improve their lives through behavioral change. Pharmaceutical and biotechnology companies, healthcare professionals, and educational institutions rely on Inflexxion for online interactive programs that: reduce health-related risks, enhance clinical outcomes, and positively influence quality of care.

PHARMACEUTICAL RISK MANAGEMENT

Inflexxion offers a comprehensive array of pharmaceutical risk management programs and consulting services to companies that develop and market opioids and stimulants. Our services help pharmaceutical companies meet the FDA’s risk management requirements.

We assist in the planning and implementation of strategies for balancing the inherent risks of these drugs with their valuable benefits. Our interactive, scientifically-validated programs can be customized to meet your needs. more...
Virtual Reality
VR Devices

- Microsoft Hololens
- Oculus Rift
- Gear VR
Effectiveness

- VRET [Virtual Reality Exposure Therapy] can produce significant behavior change in real-life situations and support its application in treating specific phobias \(^{(1)}\)

- VRT has been shown to be more effective than treatment as usual or waiting list control, and has similar results as conventional CBT and or in vivo exposure \(^{(2)}\)


\(^{(2)}\) Morina N\(^1\), Ijntema H\(^2\), Meyerbröker K\(^3\), Emmelkamp PM\(^4\). Virtual reality in the psychological treatment for mental health problems: An systematic review of recent evidence Lucia R. Valmaggia, Leila Latif, Matthew J. Kempton, Maria Rus-Calafell. Psychiatry Research 236 (2016) 189–195
Depression and VR

- Encourages less self-criticism more self-compassionate
- Uses "embodiment"
  - Avatar flips between being themselves and a distressed child.
  - Participants comfort the child, then change to "being" the child and hearing the comforting words their original avatar had just said.

*Remember the old Gestalt “two chair technique”?*

Embodying self-compassion within virtual reality and its effects on patients with depression Caroline J. Falconer, Aitor Rovira, John A. King, Paul Gilbert, Angus Antley, Pasco Fearon, Neil Ralph, Mel Slater, Chris R. Brewin
British Journal of Psychiatry Open Feb 2016, 2 (1) 74-80; DOI: 10.1192/bjpo.bp.115.002147
The Nausea Problem

Mayo Clinic

PHRs and Portals
# Dennis's health information

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergy</td>
<td>Blood Glucose Measurement</td>
</tr>
</tbody>
</table>

## Personal Profile

- Basic Demographic Information (1)
- Emergency or Provider Contact (1)
- Insurance Plan
Virtual therapies

M-health

"According to your HIPAA release form
I can’t share anything with you."
Average Daily App Usage Growth Dec 2013-June 2014

Given society’s embrace of mobile devices, consumers inevitably will turn to mobile apps to manage their wellbeing and health care.

- Assn of American Medical Colleges

Source: Flurry Analytics
http://www.flurry.com/blog/flurry-insights/health-and-fitness-apps-finally-take-fueled-fitness-fanatics#.VDBx4ahSa1x
Hazelden mobile applications for the iPhone, iPad, and iPod touch.

- Life
- Twenty-Four Hours a Day
- Each Day a New Beginning
- The Language of Letting Go
- Hazelden: Lessons from Our Sponsors
- Food for Thought
- A Day at a Time
- Hazelden: Day by Day
- Hazelden: Morning Light, Night Light

More Apps}

Mobile Apps Home
- Mobile Apps
  - iOS Applications
  - Android Applications
  - Twenty-Four Hours a Day
  - Each Day a New Beginning

Other Electronic Options
- eBooks
- Online Audio
- Questions and Issues
- Apple Devices
- eBook for Android Apps
Mental health

**Hands Up Therapy**
Manage your health
Not yet rated
Price: Paid

Deal with your emotions in a healthy way.

**IAPT Patient Portal**
Mental health
Not yet rated
Price: Free

Designed to support Health Care providers delivering Improving Access to Psychological Therapies (IAPT). Questionnaires can be quickly and securely completed, integrating with the PCMS Case Management System.

**Ginsberg**
Ginsberg is an online tool to help you understand
Apps for Clients

- Apps for Different Mental Health Conditions, Diagnostic Categories & Populations
  - Addiction
  - Agoraphobia
  - Alcohol and Drug Abuse
  - Anxiety
  - Autism
  - Bipolar
  - Children
  - Dementia
  - Depression
  - Divorce
  - Dream Analysis
  - Mindfulness & Meditation
  - OCD
  - Panic
  - PTSD/Veterans
  - Schizophrenia
  - Sleep - Insomnia
  - Smoking
  - Stress Reduction
  - Trichotillomania
  - Weight Loss

Apps for Providers

- Apps/Resources for Mental Health Professionals
  - General
  - Assessment - Evaluation, General
  - HIPAA
  - IQ Assessment
  - Personality Assessment
  - Practice Management
  - Therapists Burnout

- Apps for Psychology Students
- Online Articles and Resources
- Making Your Own App
- Books

http://www.zurinstitute.com/mentalhealthapps_resources.html
"When it comes to mobile technology, it's sort of the Wild West right now”.

Tracy Dennis Ph.D., Pennsylvania State University, Clinical Psychology
Creator of PersonalZen an AntiAnxiety App
FDA

(FDA) seeking input on a “proposed oversight approach for certain mobile applications specific to medicine or health care.”

Pocket Therapy: **Do Mental Health Apps Work?**

**Deborah Brausor**
August 27, 2012

August 27, 2012 — Smartphone users are inundated with all types of downloadable applications (apps) for their smartphones, including a myriad of so-called "mental health self-help apps." But are any of these actually helpful for patients with depression, posttraumatic stress disorder (PTSD), or other psychiatric disorders?

The apps range from **Mobilize!**, created to track users' behavior patterns and activities (or lack thereof) to predict possible depressive episodes, to **PTSD Coach**, which responds with a relaxation exercise or the phone number of a crisis management hotline when stress levels exceed a certain number.

"Actually, I found that most of these apps were surprisingly good," Lori Simon, MD, a psychiatrist in private practice in New York City and a member of the volunteer faculty at the Payne Whitney Clinic..."
Top 10 Mental Health Apps

By SANDRA KIUME

With so many apps on the market, it's hard to know which are useful.

Many are designed by software developers instead of psychologists, without scientific testing. They range from beneficial, to harmless but useless, to bordering on fraudulent.
Genomics
Moore's law is the observation that the number of transistors in a dense integrated circuit doubles approximately every two years. - Wikipedia
Wetterstrand KA. DNA Sequencing Costs: Data from the NHGRI Genome Sequencing Program (GSP) Available at: [www.genome.gov/sequencingcosts](http://www.genome.gov/sequencingcosts). Accessed 12Apr15.
Personalized Care

Entire genetic sequence can be run in one day for $1,000.
Fourteen Genes Relevant to Mental Health

Single Nucleotide Polymorphisms (SNPs)

**CYP2C19**: Citalopram, TCA, PPI, Plavix

**SCL6A4**: Various antidepressant medications

**CYP1A2**: clozapine, olanzapine, fluvoxamine

**CPY2D6**: Risperidone, narcotics (codeine, hydrocodone, tramadol), Tamoxifen, Effexor

Still controversial

http://features.necir.org/more-harm-than-good?dom=newscred&src=syn

Does Your Medicine Bottle Have the Info You Need? Why Pharmacogenetic Data Belongs on Drug Labels

Everybody’s getting into the act
Letting the Genome
OUT OF THE BOX:

Genomics could have widespread impact on the diagnosis and treatment of mental illness

By Dennis Morrison, Ph.D., Chief Clinical Officer
& Ian Chuang, M.D., Chief Medical Officer
Netsmart

Data Deluge

What’s the new role of health care providers when patients have more data?
Eric Topol, MD

“...[the doctor’s] role will be progressively morphed into providing guidance, wisdom, experience on how to transform data and information to knowledge and judgment.”
Pivot
*(pivot /ˈpivət)*

In relation to entrepreneurship, pivot refers to a shift in strategy. Pivots imply keeping one foot firmly in place as you shift the other in a new direction. New ventures capitalize on what they know and value and apply these insights in new areas.

Verb: ship, itegy

*Turn on or as if on a pivot.*

Pivots imply keeping **one foot firmly in place** as you shift the other in a new direction. New ventures capitalize on what they know and value and **apply these insights** in new areas.
My Son

It’s time to pivot
I’m not telling you it will be easy.
I’m telling you it will be worth it.
“I want to put a ding in the universe.”
Put a ding in the universe