This Time, the Robots ARE Coming
to Disrupt Marketing
ROBOT ZOMBIES WITH LAZERS
As Seen on TV

AI: Anything computers can’t
SciFi: Anything AI can’t

“General AI” – thinks and acts human
Sentience = SciFi

“Narrow AI” – task specific
Functional

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As Seen on TV

AI: Anything computers can’t
SciFi: Anything AI can’t

“General AI” – thinks and acts human
Sentience = SciFi

“Narrow AI” – task specific
Functional
Artificial Intelligence

Natural Language Processing
Conversation Bots
Computer Vision
Self-Driving Cars & Robots
Machine Learning
Software Grows Up

Specific Logic

Mathematical Model

Statistical Model

Machine Learning
Software Grows Up

Specific Logic

- Do this, then this, then this
- If this happens, do that
- If confused, report error

Mathematical Model

- Statistical Model
- Machine Learning

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Software Grows Up

**Specific Logic**
- Do this, then this, then this
- If this happens, do that
- If confused, report error

**Mathematical Model**

**Statistical Model**

**Machine Learning**
Your PC ran into a problem and needs to restart. We're just collecting some error info, and then we'll restart for you.

35% complete

For more information about this issue and possible fixes, visit https://www.windows.com/stopcode

If you call a support person, give them this info:

Stop code: DRIVER_IRQL_NOT_LESS_OR_EQUAL
Software Grows Up

Mathematical Model
Describe numerical relationships
Calculate alternatives
Human compares results & iterates

Machine Learning
Software Grows Up

**Specific Logic**
- Do this, then this, then this
- If this happens, do that
- If confused, report error

**Statistical Model**
- Calculate probabilities
- Project likelihoods
- Human compares & iterates
# Software Grows Up

<table>
<thead>
<tr>
<th><strong>Specific Logic</strong></th>
<th><strong>Mathematical Model</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Do this, then this, then this</td>
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<tr>
<td>If this happens, do that</td>
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<td>If confused, report error</td>
<td>Human compares results &amp; iterates</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Statistical Model</strong></th>
<th><strong>Machine Learning</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculate probabilities</td>
<td>Uses examples to figure it out</td>
</tr>
<tr>
<td>Project likelihoods</td>
<td>and changes its mind</td>
</tr>
<tr>
<td>Human compares &amp; iterates</td>
<td></td>
</tr>
</tbody>
</table>

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Software Grows Up

Machine Learning

Uses examples to figure it out and changes its mind
Machine Learning

Supervised
Unsupervised
Reinforcement
Machine Learning
Supervised

You know the right answer needs many examples of labeled data
Machine Learning

Supervised

You know the right answer needs many examples of labeled data.
Machine Learning

Supervised
You know the right answer
needs many examples
of labeled data

Unsupervised
You don't know the right answer
finds patterns in unlabeled data
may or may not be useful (correlation/causation)
Machine Learning

Supervised
You know the right answer
needs many examples
of labeled data

Reinforcement
No absolute right answer
some answers are better
"rewards" results + optimizes over time

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You don't know the right answer
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"rewards" results + optimizes over time
Machine Learning

**Supervised**
- Customers vs. never bought
- High CLV vs. profit drains
- Tech support vs. cancellation

**Unsupervised**
- Find look-alike prospects
- People who act like this buy that
- Ads with these features attract higher CVL customers

**Reinforcement**
- Email opens and clickthroughs
- Display ad response
- Conversion rate optimization
Software Grows Up

Machine Learning
Uses examples to figure it out
and changes its mind
Marketing Operations is Changing

Market Research
Marketing Operations is Changing

Market Research

Word of Mouth

Discovering Customer Experience Trends with Natural Language Processing

Understanding customer feedback gets harder and harder at greater scale and with a greater variety of channels through which customers can provide feedback.

Marketing Operations is Changing

Market Research
Word of Mouth
Marketing Operations is Changing

Market Research

Word of Mouth

Social Media Monitoring

LogoGrab.com
Marketing Operations is Changing

Market Research
Word of Mouth
Literature Eval

Equals3.ai
Tell me everything about marketing shoes with a budget between $2 million and $7 million in the past 4 years in the EU with a celebrity spokesperson.
### Marketing Operations is Changing

<table>
<thead>
<tr>
<th>Market Research</th>
<th>Test Coordination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audience Targeting</td>
<td>Project Planning</td>
</tr>
<tr>
<td>Message Creation</td>
<td>Project Staffing</td>
</tr>
<tr>
<td>Creative Design</td>
<td>Meeting Scheduling</td>
</tr>
<tr>
<td>Ad Spend</td>
<td>Budget Allocation</td>
</tr>
<tr>
<td>Loyalty Management</td>
<td>Data Cleansing</td>
</tr>
</tbody>
</table>
What Can ML Do Better?

Correlations people with *this* attribute have *that* attribute
Segmentation these people form a group
Clustering there are X number of groups
Anomalies these people are unique

Are results interesting? Useful? Worthy of further study?
The Big Guys

Adobe
IBM
Oracle
Salesforce
SAP
Shopify

Sensei
Watson
Intelligent Cloud Applications
Einstein
Leonardo
Kit
Shopify Kit

Frequently asked questions

How many Shopify stores are there?
Last reported in February 2019, the figure quoted was more than 800,000 merchants are now powered by Shopify. 2017 saw an increase of 200,000+ new merchants.
Shopify Kit
**Shopify Kit**

**Easy Instagram and Facebook ads**
Create highly-targeted social ad campaigns, effortlessly. Kit will write, build, and post the ad for you.

**Email marketing automation**
Kit can send custom emails to your customers thanking them for their purchase and promoting new products and discounts.

**Powerful app integrations**
Use other Shopify apps? Connect them to Kit so it can handle even more marketing tasks for you.

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Marketing Operations is Changing

Market Research  
Audience Targeting  
Message Creation  
Creative Design  
Ad Spend  
Loyalty Management  

Test Coordination  
Data Cleansing  
Project Planning  
Meeting Scheduling  
Staffing  
Budget Allocation
Customer Communication is Changing

Photo by Jason Rosewell on Unsplash

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Customer Communication is Changing
Customer Communication is Changing
Customer Communication is Changing

Optimize for Voice
Optimize for Augmented Reality
Augmented Reality
Augmented Reality
Augmented Reality
Facial Recognition

Warby Parker using the iPhone X TrueDepth camera is super super smart:

Crane

9:11 AM - 7 Nov 2017

298 Retweets 809 Likes
Facial Recognition

AI Mistakes Bus-Side Ad for Famous CEO, Charges Her With Jaywalking

By Tang Ziyi / Nov 22, 2018 04:17 PM / Society & Culture
Customer Communication is Changing

Optimize for Voice
Optimize for Augmented Reality
Optimize for Facial Recognition
Optimize for Vehicle
Car as Marketing Platform
Car as Marketing Platform

Location-based ads - coordinate with billboards
Entertainment, work, and sleep apps
Take your brand on the road (curated road trip)
Delivery to car
Optimize for Delivery

Key Smart Lock Kit

Easily monitor and control your door with the Key App

Choose the smart lock that matches your style, download the Key App to unlock your door from anywhere, and if you've connected your kit with an Amazon Cloud Cam, you can check in anytime with a live view.
Optimize for Delivery

key for your home  for your car  for your garage

Open anywhere
Conveniently turn your vehicle into a personal mobile locker.

Unlocked
Customer Communication is Changing

Optimize for Voice
Optimize for Augmented Reality
Optimize for Facial Recognition
Optimize for Vehicle
Optimize for Delivery
Customer Communication is Changing

Optimize for Voice
Optimize for Augmented Reality
Optimize for Facial Recognition
Optimize for Vehicle
Optimize for Delivery
Optimize for Partnerships
Customer Communication is Changing

FIT & CONSTRUCTION

UNPARALLELED COMFORT AND PERFORMANCE

Flat seams minimize friction

Silver fibers woven directly into the fabric read real-time biometric data

Side down to ensure a snug fit

Detachable black box streams stats directly to your iPhone or iPod touch

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Customer Communication is Changing
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Photo by Fikri Rasyid on Unsplash
Customer Communication is Changing

Photo by Jose Soriano on Unsplash
Photo by Fikri Rasyid on Unsplash
Customer Communication is Changing

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Photo by Jose Soriano on Unsplash
Customer Communication is Changing
Customer Communication is Changing

Because of LOTS of data

Optimize for Voice
Optimize for Augmented Reality
Optimize for Facial Recognition
Optimize for Vehicle
Optimize for Delivery
Optimize for Partnerships
Customer Communication is Changing
Because of LOTS of data

Founded by industry veterans John Sculley and David Steinberg, Zeta Global helps customers like American Airlines, Toys R Us and Sprint manage their data and optimize digital communication. Insights are derived from the software company’s database of more than 350 million people, and the company claims to have an average of 3,000 attributes per consumer.

Zeta Global aggregates data across channels, including mobile, social and email, to help its customers personalize brand communication with more relevant offers and ads. The company then tracks how people interact with the advertisements to help improve future communications with the help of machine-learning algorithms.
### A Customer Data Taxonomy

<table>
<thead>
<tr>
<th>Who They Are</th>
<th>What They Did</th>
<th>What They Like</th>
<th>What They Have</th>
<th>What They Do</th>
<th>How They Feel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Education</td>
<td>Preferences</td>
<td>Income</td>
<td>Keystrokes</td>
<td>Religion</td>
</tr>
<tr>
<td>Gender</td>
<td>Career</td>
<td>Settings</td>
<td>Home</td>
<td>Gestures</td>
<td>Values</td>
</tr>
<tr>
<td>Age</td>
<td>Criminal Record</td>
<td>Avocations</td>
<td>Cars</td>
<td>Gaze</td>
<td>Donations</td>
</tr>
<tr>
<td>Race</td>
<td>Press exposure</td>
<td>Political Party</td>
<td>Devices</td>
<td>Day part</td>
<td>Political party</td>
</tr>
<tr>
<td>Address</td>
<td>Publications</td>
<td>Social Groups</td>
<td>Clothing</td>
<td>Location</td>
<td>Skeptic/Altruism</td>
</tr>
<tr>
<td>Phone</td>
<td>Awards</td>
<td>Social Likes</td>
<td>Jewelry</td>
<td>IP address</td>
<td>Intro/Extrovert</td>
</tr>
<tr>
<td>Fingerprint</td>
<td>Associations</td>
<td>Entertainment</td>
<td>Investments</td>
<td>Social posts</td>
<td>Liberal/Conserv.</td>
</tr>
<tr>
<td>Heart Rate</td>
<td>Credit score</td>
<td>Hobbies</td>
<td>Subscriptions</td>
<td>Dining out</td>
<td>Flexible/Inflexible</td>
</tr>
<tr>
<td>Weight</td>
<td>Legal matters</td>
<td>News feeds</td>
<td>memberships</td>
<td>Purchases</td>
<td>Aggress./Passive</td>
</tr>
<tr>
<td>Device</td>
<td>Loans</td>
<td>Browser history</td>
<td>Collections</td>
<td>TV viewing</td>
<td>Opinion</td>
</tr>
<tr>
<td>Gov ID</td>
<td>Divorce</td>
<td>Brand affinity</td>
<td>Relationships</td>
<td>Travel</td>
<td>Mood</td>
</tr>
<tr>
<td>etc.</td>
<td>etc.</td>
<td>etc.</td>
<td>etc.</td>
<td>etc.</td>
<td>etc.</td>
</tr>
</tbody>
</table>

Other attributes include:
- Education
- Career
- Criminal Record
- Press exposure
- Address
- Publications
- Awards
- Associations
- Credit score
- Legal matters
- Loans
- Divorce
- etc.
A Customer Data Taxonomy

Who They Are
- Name
- Gender
- Age
- Race
- Address
- Phone
- Fingerprint
- Heart Rate
- Weight
- Device
- Gov ID
- etc.

What They Did
- Education
- Career
- Criminal Record
- Press exposure
- Publications
- Awards
- Associations
- Credit score
- Legal matters
- Loans
- Divorce
- etc.

What They Like
- Preferences
- Settings
- Avocations
- Social Groups
- Social Likes
- Entertainment
- Hobbies
- News feeds
- Browser history
- Brand affinity
- etc.

What They Have
- Income
- Home
- Cars
- Devices
- Clothing
- Jewelry
- Investments
- Subscriptions
- Memberships
- Collections
- Relationships
- etc.

What They Do
- Keystrokes
- Gestures
- Gaze
- Day part
- Location
- IP address
- Social posts
- Dining out
- Purchases
- TV viewing
- Travel
- etc.

How They Feel
- Religion
- Values
- Donations
- Political party
- Skeptic/Altruism
- Intro/Extrovert
- Liberal/Conserv.
- Flexible/Inflexible
- Aggress./Passive
- Opinion
- Mood
- etc.
Customer Communication is Changing

Optimize for Voice
Optimize for Augmented Reality
Optimize for Facial Recognition
Optimize for Vehicle
Optimize for Delivery
Optimize for Partnerships
Customer Communication is Changing

- Optimize for Voice
- Optimize for Augmented Reality
- Optimize for Facial Recognition
- Optimize for Vehicle
- Optimize for Delivery
- Optimize for Partnerships
- Optimize for C2B Bot Negotiation
C2B Bot Negotiation

Premise: Customers Own Their Own Data
United Nations Declaration of Human Rights

1948

The Universal Declaration of Human Rights is a document that provides the foundation for the United Nations' efforts to promote and protect human rights around the world. It consists of 30 articles that outline the principles of freedom, equality, and justice for all individuals. The declaration is widely recognized as a cornerstone of international human rights law and has been adopted by all member states of the United Nations.

---

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United Nations Declaration of Human Rights

Our current 30 human rights protect us from history repeating itself. However, they do not protect us from the problems of today, or tomorrow.

2019
United Nations Declaration of Human Rights

```
#31 "Everyone has the right to legal ownership of their inherent human data as property"
```

Our current 30 human rights protect us from history repeating itself. However, they do not protect us from the problems of today, or tomorrow.

---

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C2B Bot Negotiation

Premise: Customers Own Their Own Data

How?
C2B Bot Negotiation

Premise: Customers Own Their Own Data
DNS for identity
Distributed services (respect network)
Transaction auditability
C2B Bot Negotiation

Premise: Customers Own Their Own Data
DNS for identity
Distributed services (respect network)
Transaction auditability

Internet Corporation for Assigned Names and Numbers

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C2B Bot Negotiation

Premise: Customers Own Their Own Data

DNS for identity
Distributed services (respect network)
Transaction auditability

Internet Corporation for Assigned Names and Numbers

ICANN

Blockchain

Distributed
Secure
Auditable
Trustworthy

Vendor Relationship Management

Photo by Iker Urteaga on Unsplash

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C2B Bot Negotiation

Premise: Customers Own Their Own Data
C2B Bot Negotiation

Premise: Customers Own Their Own Data
Customers Store Their Own Data
C2B Bot Negotiation

Premise: Customers Own Their Own Data
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Customers Store Their Own Data
C2B Bot Negotiation

Premise: Customers Own Their Own Data
Customers Store Their Own Data
C2B Bot Negotiation

Premise: Customers Own Their Own Data
Customers Store Their Own Data

Trustworthy?
You decide where to store your data POD
Separate from apps so free to move at any time
You give people and apps permission to read or write
Data saved by one app available in another
All data in sync, always

solid.inrupt.com
C2B Bot Negotiation

Premise:  
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solid.inrupt.com

Tim Berners-Lee
@timberners_lee
Director of the World Wide Web Consortium (W3C) w3.org, the place to agree on web standards. Founded webfoundation.org - let the web serve humanity

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C2B Bot Negotiation

Premise:  Customers Own Their Own Data
          Customers Store Their Own Data
C2B Bot Negotiation

Premise:
- Customers Own Their Own Data
- Customers Store Their Own Data
- Customers Want Their Own Data
Nobody (but Sir Tim) is Trustworthy
C2B Bot Negotiation

Premise: Customers Own Their Own Data
Customers Store Their Own Data
Customers Want Their Own Data
Nobody is Trustworthy
Convenience
Convenience

2 lbs = 80 ea, 12oz cups = 12.5¢ per cup

"Tall" = 1 ea, 12oz cup = $1.85 per cup

15 times More $$$
Convenience

Shopping List
- AA batteries
- Dry cleaner
- Car wash
- Trash bags
- Groceries
- Bakery
- Light bulbs
Convenience

Shopping List
2 AA batteries
1 Dry cleaner
3 Car wash
2 Trash bags
5 Groceries
4 Bakery
2 Light bulbs
Convenience

Shopping List

2 AA batteries
1 Dry cleaner
3 Car wash
2 Trash bags
5 Groceries
4 Bakery
2 Light bulbs
C2B Bot Negotiation

Premise: Customers Own Their Own Data
Customers Store Their Own Data
Customers Want Their Own Data
Nobody is Trustworthy
Convenience
The ultimate convenience is having to do *nothing*.

- Jonathan Yarmis, The Skills Connection
Convenience

Recommended for you in Subscribe & Save

- Gold Toe Men's Canterbury Socks, Size 10-13 (Shoe Size 6-12), $21.00, Auto-delivered: Monthly
- Q-tips Cotton Swabs, 500 ct Swab, $12.64, Auto-delivered: Every 6 months
- simplehuman Code H Container, Size 60 Pack, Style Name C, $18.04, Auto-delivered: Every 3 months
- Affresh W10282479 Dishwasher Cleaner, 1 Count, $5.13, Auto-delivered: Every 5 months
- Hefty Ultra Strong Trash Bags, Size 80 Count, Style Name W, $12.08, (50.15 / count), Auto-delivered: Every 3 months
Convenience
C2B Bot Negotiation

Premise: Customers Own Their Own Data
Customers Store Their Own Data
Customers Want Their Own Data
C2B Bot Negotiation

Premise:  Customers Own Their Own Data
          Customers Store Their Own Data
          Customers Want Their Own Data
          Customers Run Their Own Agents
Customers Run Their Own Agents

My Personal Agent is mine / for me (not GAFTA, etc.)
Knows all about me (protected data)
Grants degrees of data access (circles of trust)
Proactive
MY MAN JEEVES
P.G. WODEHOUSE
WORLD CLASSICS IN LARGE PRINT
Customers Run Their Own Agents

My Personal Agent is mine / for me (not GAFTA, etc.)
Knows all about me (protected data)
Grants degrees of data access (circles of trust)
Proactive
Convenience

Dishwasher fail in 30 days at 90%
12 models fit kitchen dimensions
4 models fit kitchen style
2 models fit budget
1 model fits schedule
Negotiated best price
Install Wednesday?
[ ] OK?
[ ] Not yet

Photo by Lucas Benjamin on Unsplash
Photo by Rock'n Roll Monkey on Unsplash
Convenience
Convenience
C2B Bot Negotiation

The ultimate convenience is having to do *nothing*.

- Jonathan Yarmis, The Skills Connection
C2B Bot Negotiation

YOU KNOW ME SO WELL
C2B Bot Negotiation
C2B Bot Negotiation

1.45 pm

Room: Saal 1

Keynote:
This Time, the Robots ARE Coming

Jim Sterne has an impressive track record looking over the horizon and telling the rest of us what to expect. He wrote his first book, "World Web Marketing," in 1995. He wrote "Web Metrics" in 2002, He wrote "Artificial Intelligence for Marketing" in 2017. This year, he explains how robots will help you do your job and how they will transform marketing forever. Your professional, digital agents can work by your side to get the right message to the right person at the right time. But soon, marketing as we know it will change forever. If you’re in B2B or B2C and have learned to survive in a C2C world, get ready for C2B: where your customers’ bots negotiate with your bots.

Moderator:
Alexander Holl, CEO, 121WATT

Speaker:
Jim Sterne, Co-Founder and Board Chair, Digital Analytics Association

2.30 pm
Session Change
ROBOT ZOMBIES WITH LAZERS
Harness the Power for Yourself

Take advantage of the tools
Build your brand
Build systems to talk to customers' systems
Your Advantages

Reason
Common sense
Empathy
Experience
Ability to relate unrelated info
Ability to onboard new ideas
Your Job Will Always Be

Recognizing the problem
Deciding which data to consider
Evaluate the output
Jim Sterne

This Time, the Robots ARE Coming to Disrupt Marketing