



An Intelligent Way to Drive Adoption of Enterprise Analytics using ML/DL/AI

Rick Pechter, Principal Solutions Architect

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MicroStrategy

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Abstract

Thursday | 12:15 pm – 12:45 pm | Studio 3

Building on the Big Data revolution from earlier in this decade, organizations are now turning to machine learning and artificial intelligence to make sense of all that data, while simultaneously needing to adapt to ever changing social media channels and increased connectivity made possible by applications that didn't exist just a few years ago. And yet, some things don't change, like the need to have trusted access to governed data, the ability to adopt alongside existing infrastructures the new technologies that provide a competitive edge and, most importantly, a modern analytic environment that promotes adoption by all stakeholders.

Organizations need a platform that supports the diverse analytical tool sets that users love with an authoring experience that makes deploying applications to any touchpoint easy and agile. Attend this session to learn how to modernize your analytical capabilities with ML/DL/AI by continuing the conversation on Deep Learning we started at last Fall's HITS 2018, and see how pervasive, intelligent analytics can transform your business drive and adoption like never before!

Presented by

Rick Pechter

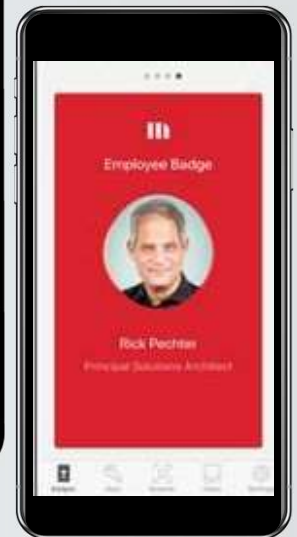
Principal Solutions Architect

MicroStrategy

MicroStrategy Overview

- Founded in 1989
- Operates in 39 cities 27 countries
- Over 4,000 customers in 20 industries
- A top analytics vendor by revenue
- Innovator in web, mobile, and cloud-based analytics
- Listed on NASDAQ: MSTR

MicroStrategy's **Vision**
Drives our Innovations



<https://www.mesalliance.org/2019/01/17/2018-ais-electrifying-gap-year/>

Gartner "Critical Capabilities for Analytics and Business Intelligence Platforms"

Released May 2019

Top Takeaways From the Gartner Critical Capabilities Report

A holistic suite of expert services to accelerate time to value and maximize your platform investment

1 2 3 4

MicroStrategy has among the highest product scores of any vendor

Tableau, Qlik, and Power BI dinged for product gaps

MicroStrategy #1 for Embedded Analytics

Innovation beyond Gartner's use cases

MicroStrategy Ranks #1 in 4 of 6 Use Cases

#1

Agile, Centralized BI Provisioning
Score: 4.34

#1

Governed Data Discovery
(Score: 4.24/5)

#1

OEM or Embedded BI
Score: 4.64

#1

Extranet Deployment
Score: 4.38

#2

Decentralized BI Provisioning*
Score: 4.23
*Virtually tied with Tibco - 4.26

#9

Augmented Analytics*
Score: 2.87
*Tied with PowerBI

MicroStrategy | Analytics and Mobility

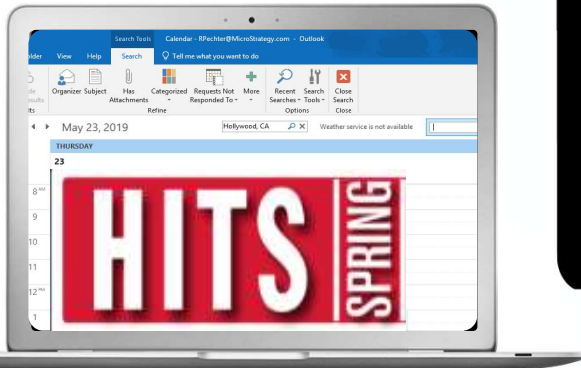
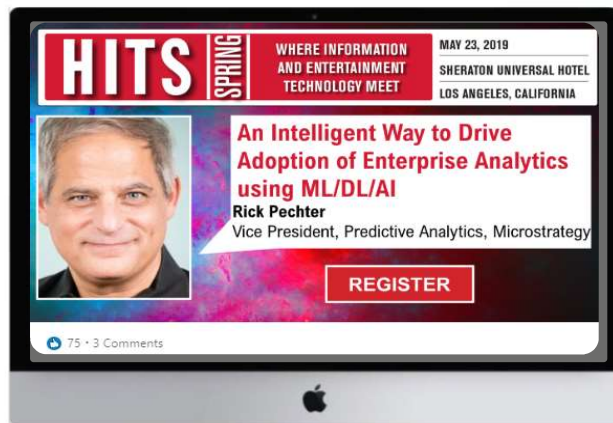
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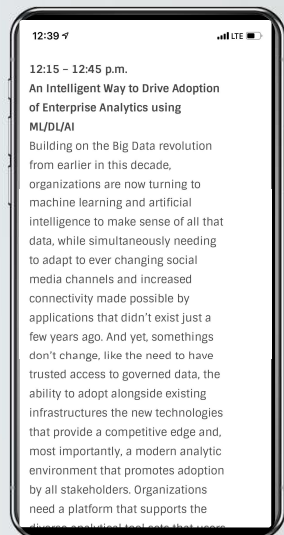
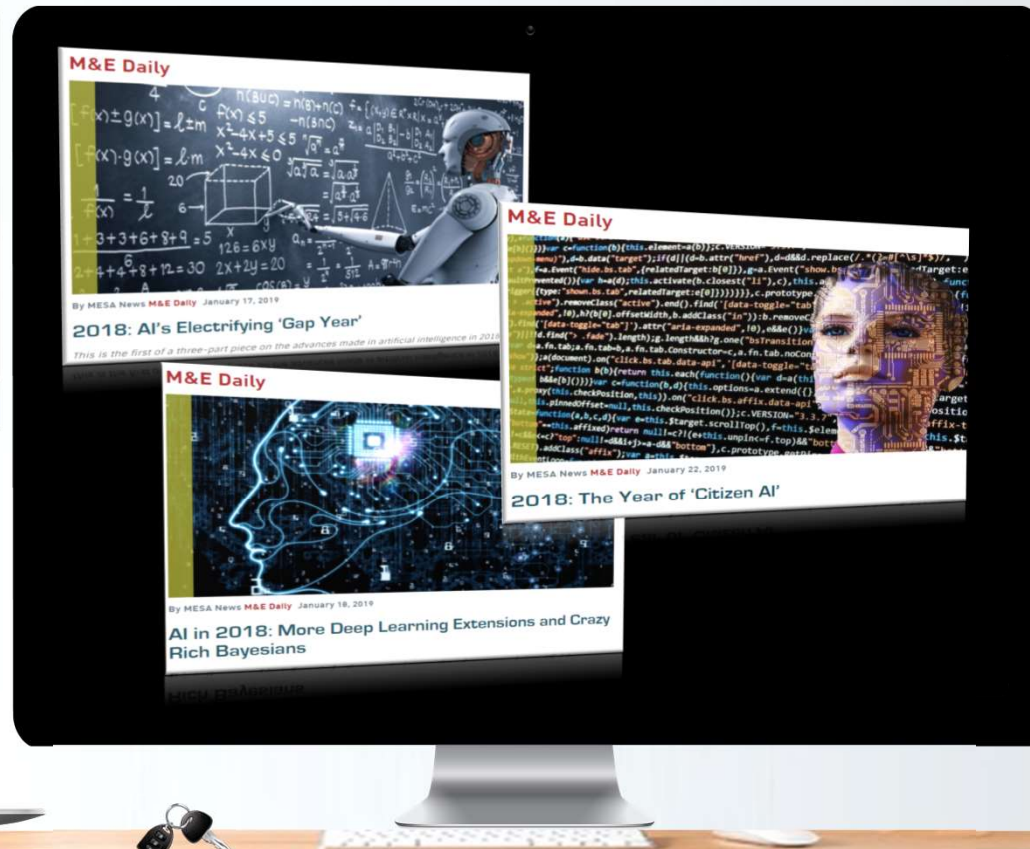
"MicroStrategy has among the **highest product scores of any vendor** in this Critical Capabilities, both overall and for all the evaluated used cases. It gained excellent or outstanding scores for 12 out of 15 critical capabilities evaluated for this research."

MicroStrategy's **Vision**
Drives our Innovations

Our ever evolving relationship with Technology



<https://www.mesalliance.org/2019/01/17/2018-ais-electrifying-gap-year/>



Our ever evolving relationship with Technology



Five Keys to Deploying AI in the Enterprise — *that most companies don't have:*

- Educated leaders,
- Lots of properly curated data,
- Lots of money to experiment,
- Large, diverse team of \$\$\$ quants
- **Freedom to pursue uncertain goals** through unproven methods ... & fail miserably

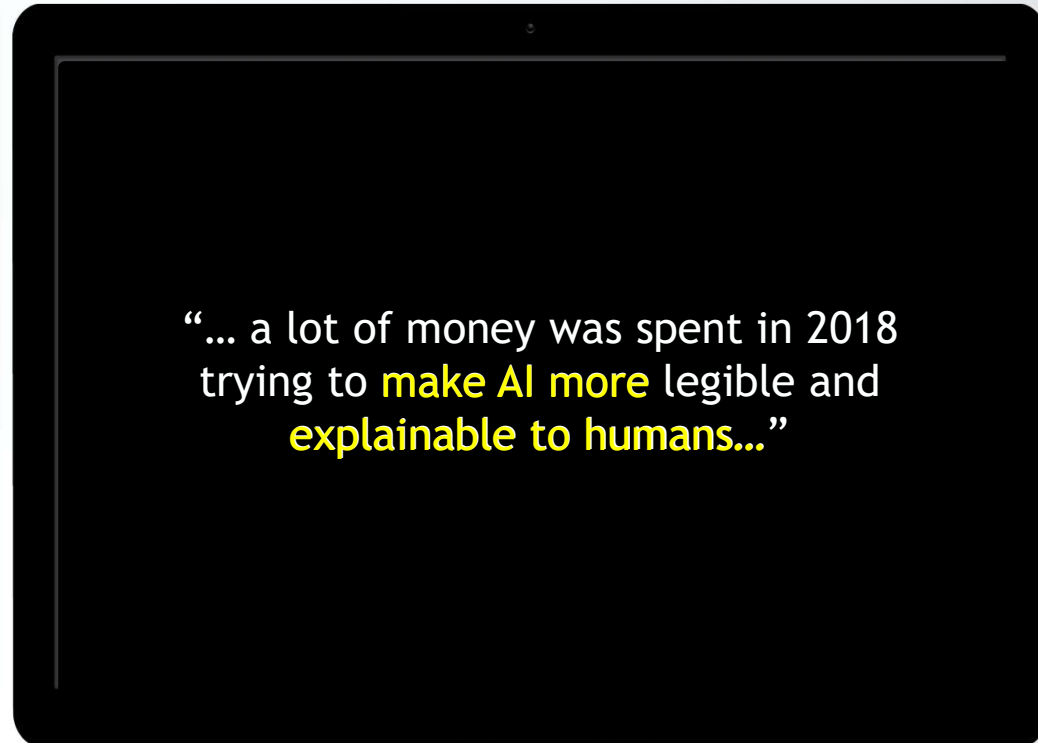
1. Freedom to pursue uncertain goals

<https://www.mesalliance.org/2019/01/17/2018-ais-electrifying-gap-year/>

Our ever evolving relationship with Technology



1. Freedom to pursue uncertain goals
2. Make AI more explainable to humans



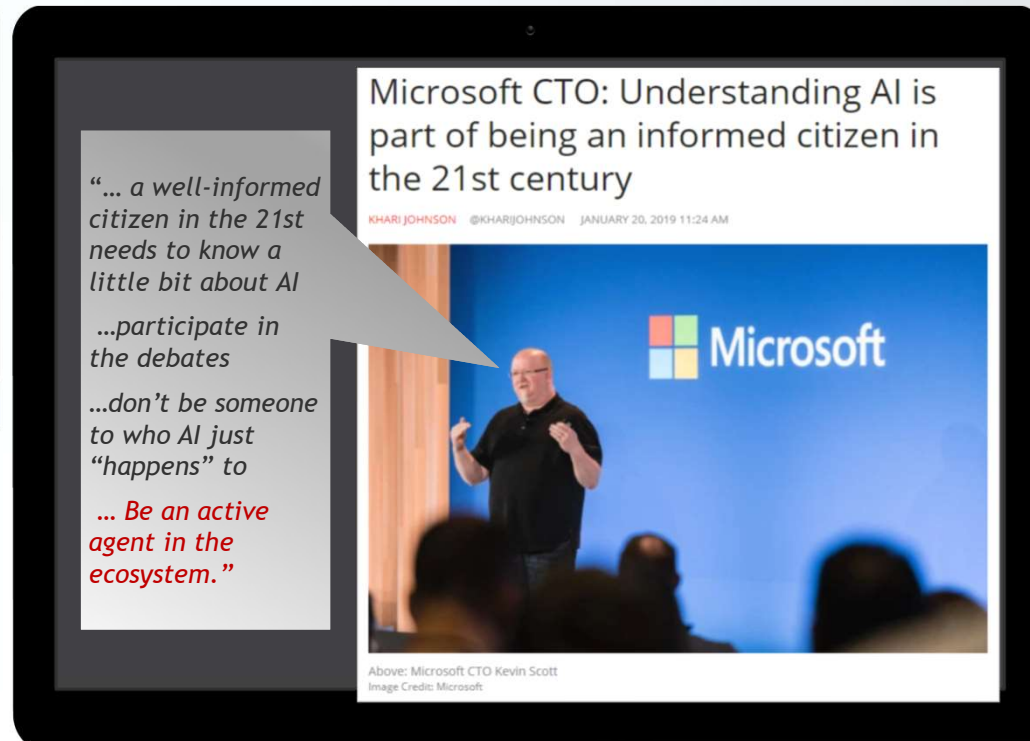
<https://www.mesalliance.org/2019/01/22/ai-2018-the-year-of-citizen-ai/>

Our ever evolving relationship with Technology



1. Freedom to pursue uncertain goals
2. Make AI more explainable to humans
3. *Be an active agent in the ecosystem*

<https://www.mesalliance.org/2019/01/18/ai-in-2018-more-deep-learning-extensions-and-crazy-rich-bayesians/>



Our ever evolving relationship with Technology



“The problem is not that AI will get too smart and take over the world, the problem is that it’s too stupid and already has.”

Pedro Domingos
Computer Scientist
Univ of Washington



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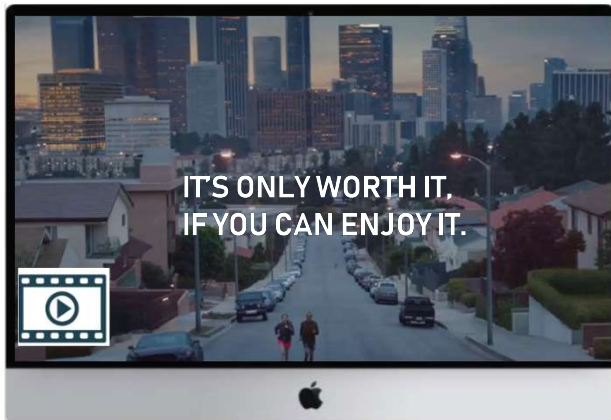


1. Freedom to pursue uncertain goals
2. Make AI more explainable to humans
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Did you catch all the AI in those Super Bowl ads?

Robots, Robots and more Robots

Intuit
Sprint
Michelob Ultra



Did you catch all the AI in those Super Bowl ads?

Amazon pokes fun at itself and those well-publicized Alexa Failures



AdAge

Super Bowl Alert! more AI

Amazon unveils spots for both Alexa

By Jeanine Poggi
Published: January 30, 2019

Good afternoon Super Bowl junkies,

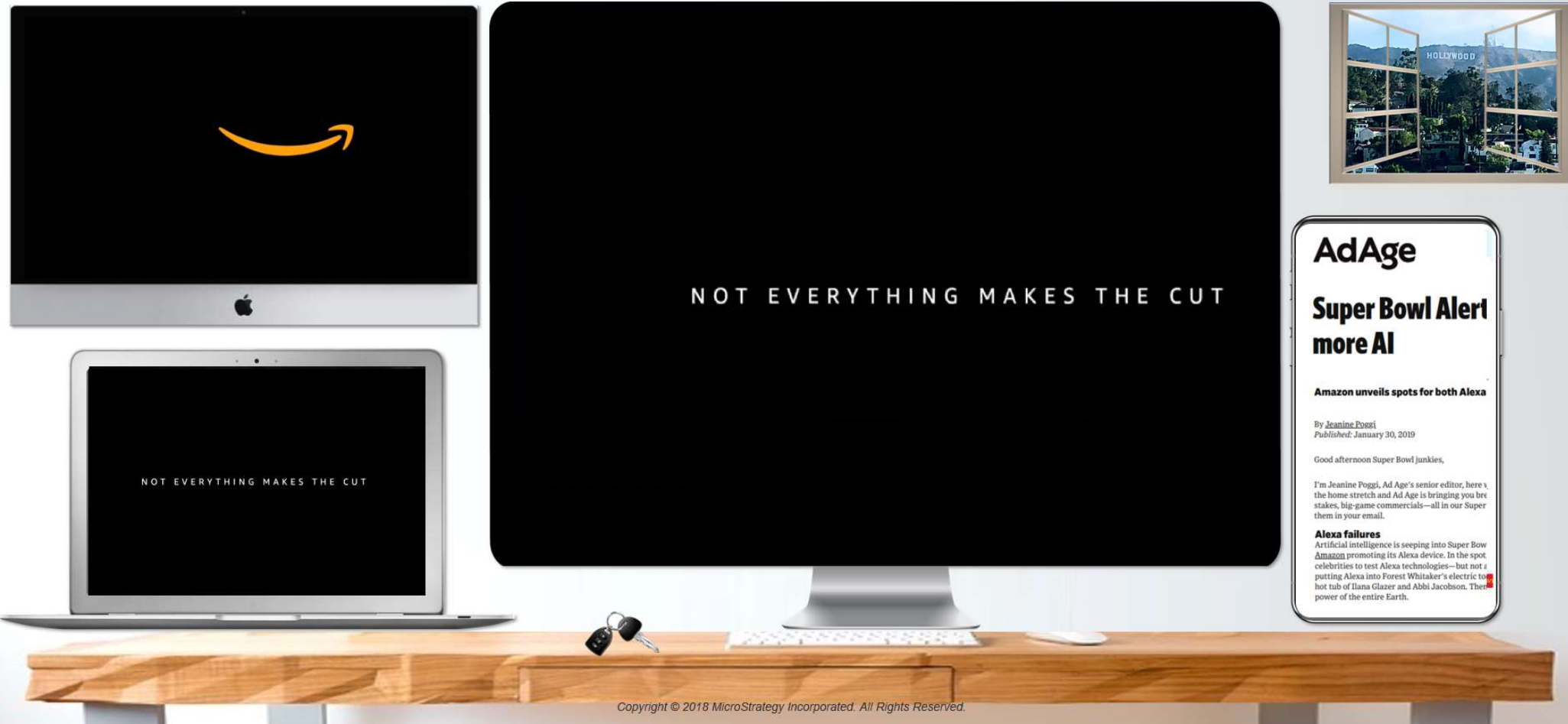
I'm Jeanine Poggi, Ad Age's senior editor, here's the home stretch and Ad Age is bringing you bre stakes, big-game commercials—all in our Super them in your email.

Alexa failures

Artificial intelligence is seeping into Super Bow Amazon promoting its Alexa device. In the spot celebrities to test Alexa technologies—but not a putting Alexa into Forest Whitaker's electric too hot tub of Ilana Glazer and Abbi Jacobson. Ther power of the entire Earth.

Did you catch all the AI in those Super Bowl ads?

Amazon pokes fun at itself and those well-publicized Alexa Failures



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Promoters vs. Influencers

Two Movies about the failed Fyre Festival



Promoters vs. Influencers

Two Movies about the Failed Fyre Festival



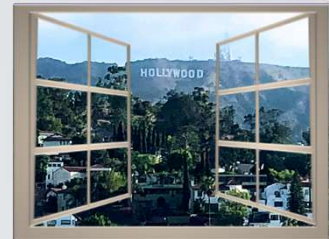
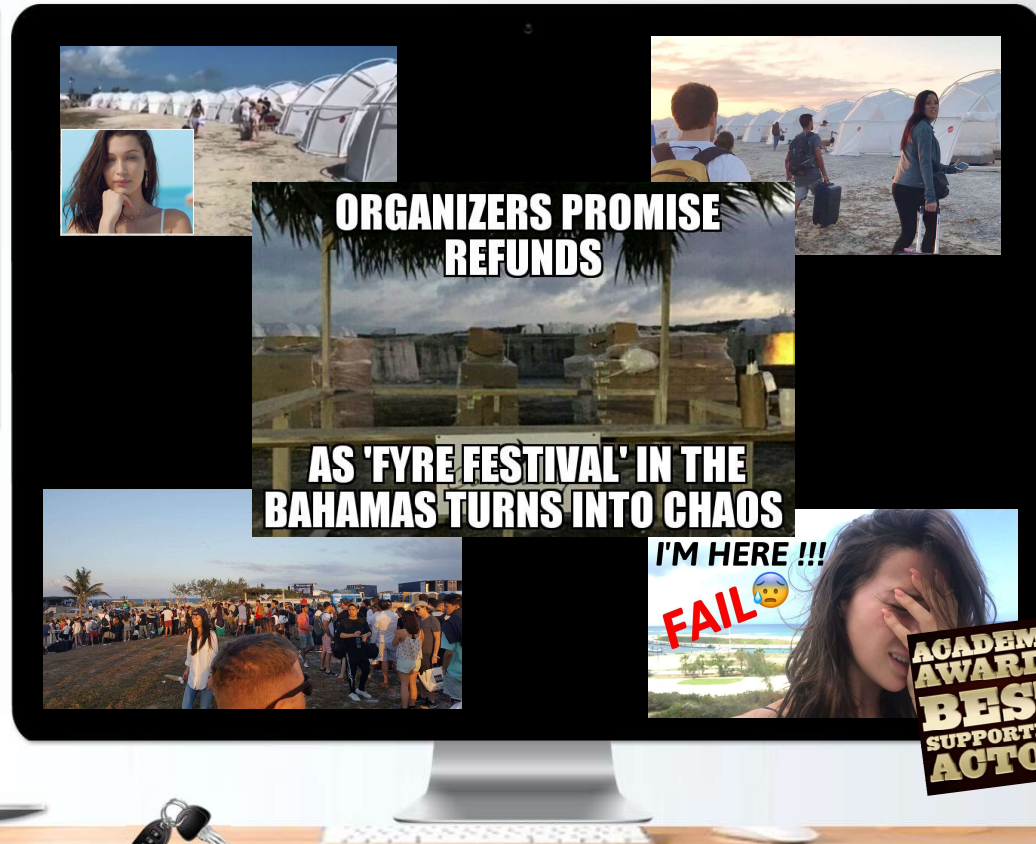
Influencers: Can make you or break you

Two Movies about the Failed Fyre Festival



Influencers: Can make you or break you

Flashback to HITS Fall 2018



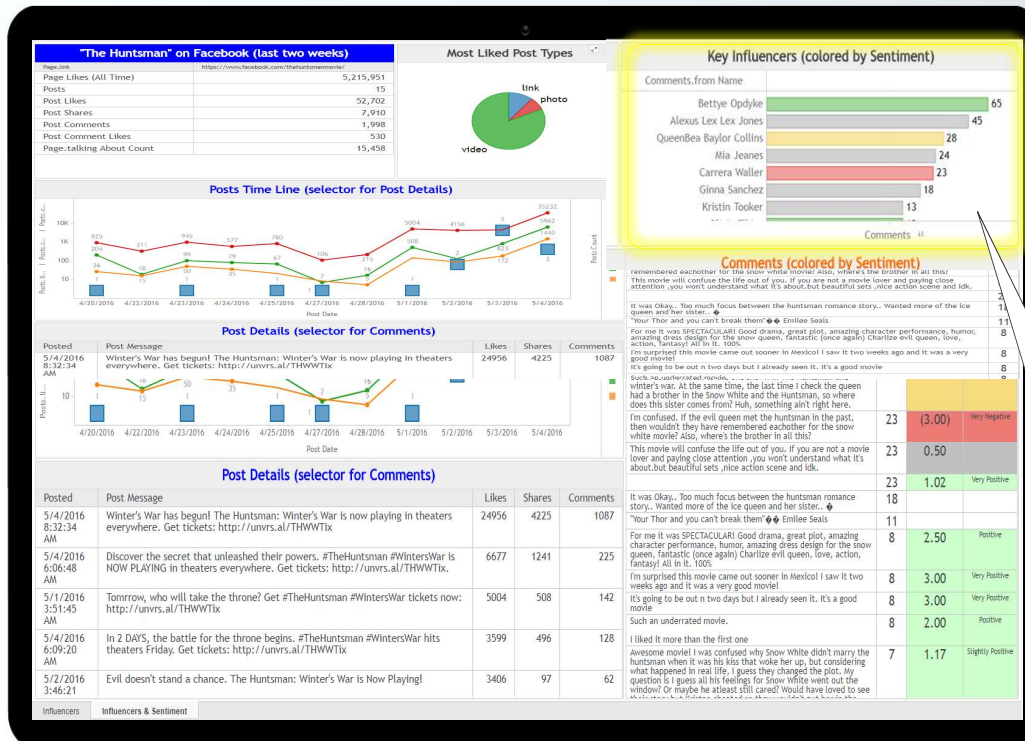
Influencing the Key Influencers

Flashback to HITS Fall 2018



Influencing the Key Influencers

Flashback to HITS Fall 2018



Influencing the Key Influencers

Flashback to HITS Fall 2018

Sentiment Analysis with MicroStrategy

Video:
<http://tinyurl.com/MicroStrategySA>

IntegrationPack/scripts X

<http://github.com/MicroStrategy/RIntegrationPack>

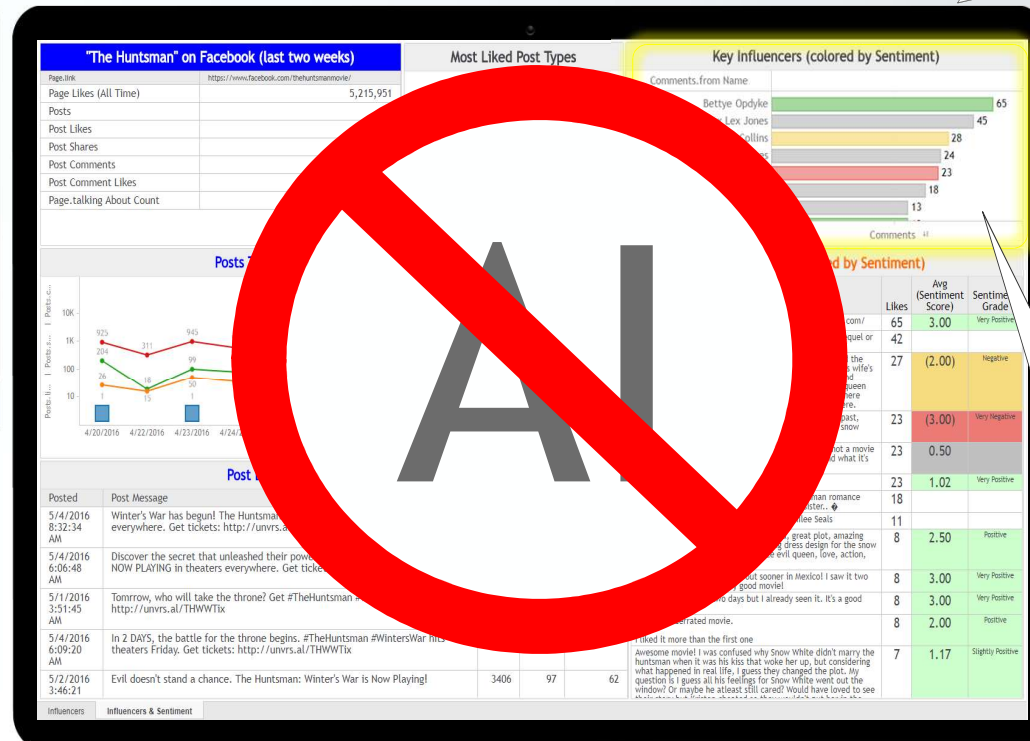
Off-the-shelf R scripts

These ready-to-use R scripts can easily be added to your R-enabled MicroStrategy environment. Simply save them to your desktop or Intelligence Server and reference them with a MicroStrategy metric.

Contents

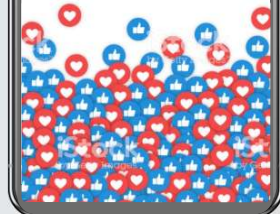
Forecasting	Classification	Descriptive
ARIMA	k-Nearest Neighbors	k-Means Clustering
Seasonal Forecasting	Neural Network	k-Medoids Clustering
Stepwise Regression	Naive Bayes	Pairwise Correlation
Survival Analysis	Random Forest	
	Stepwise Logistic Regression	

Sentiment Analysis

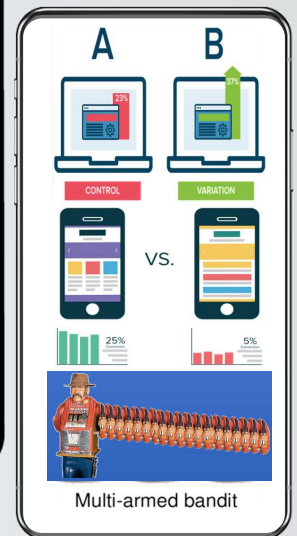
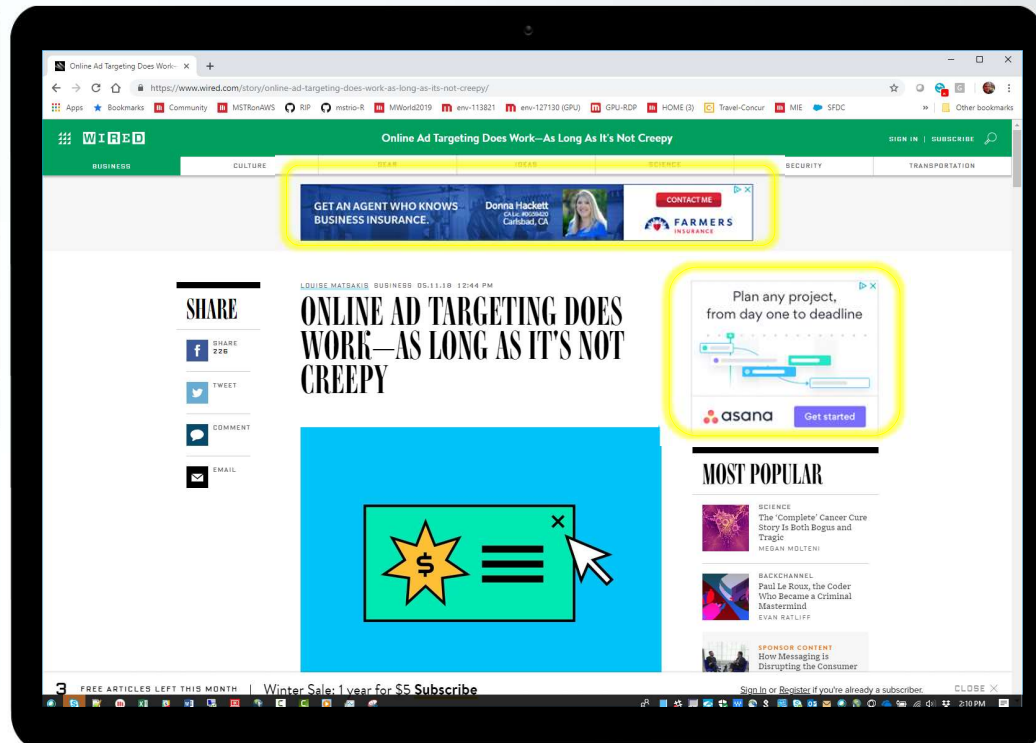


You can do this!

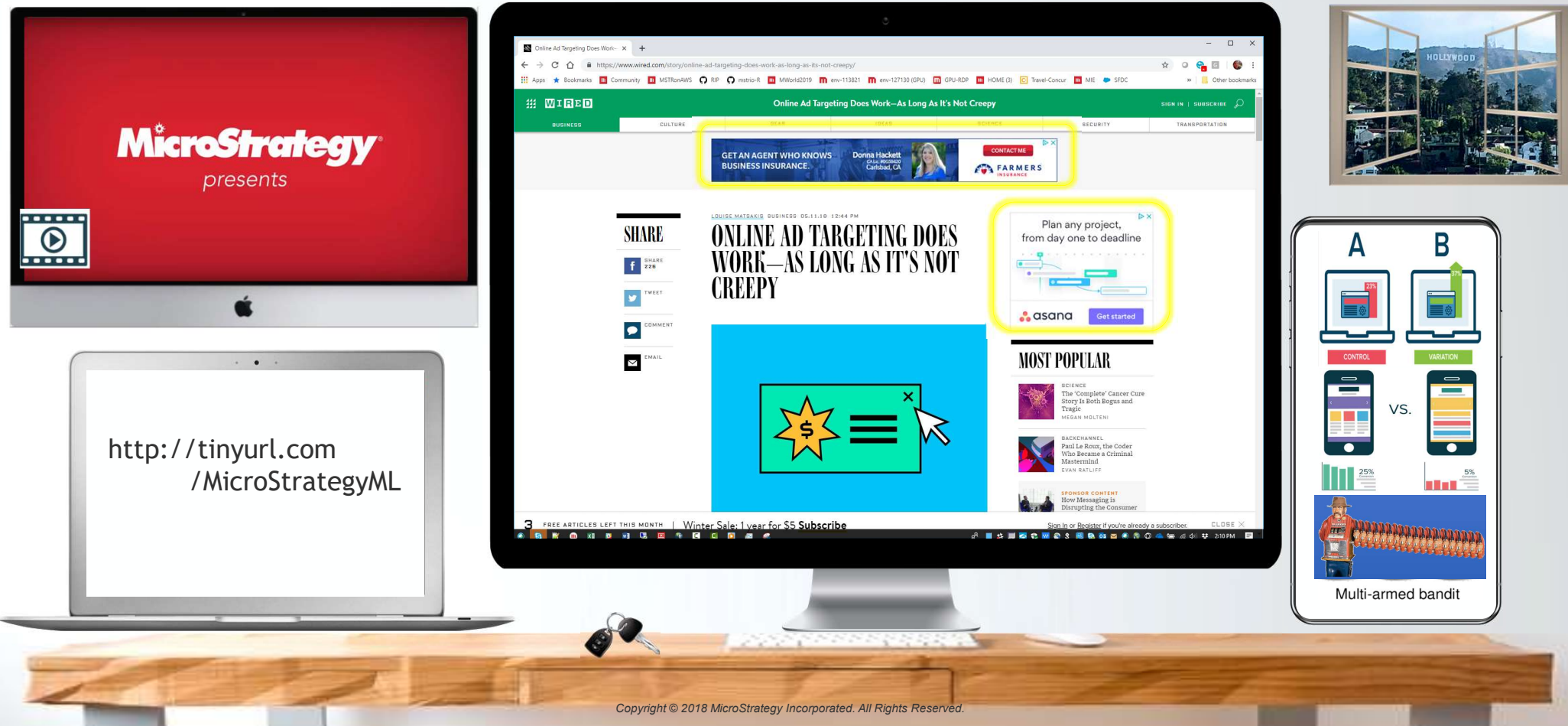
Thanks to the
**MicroStrategy
Off-the-Shelf
R Script**



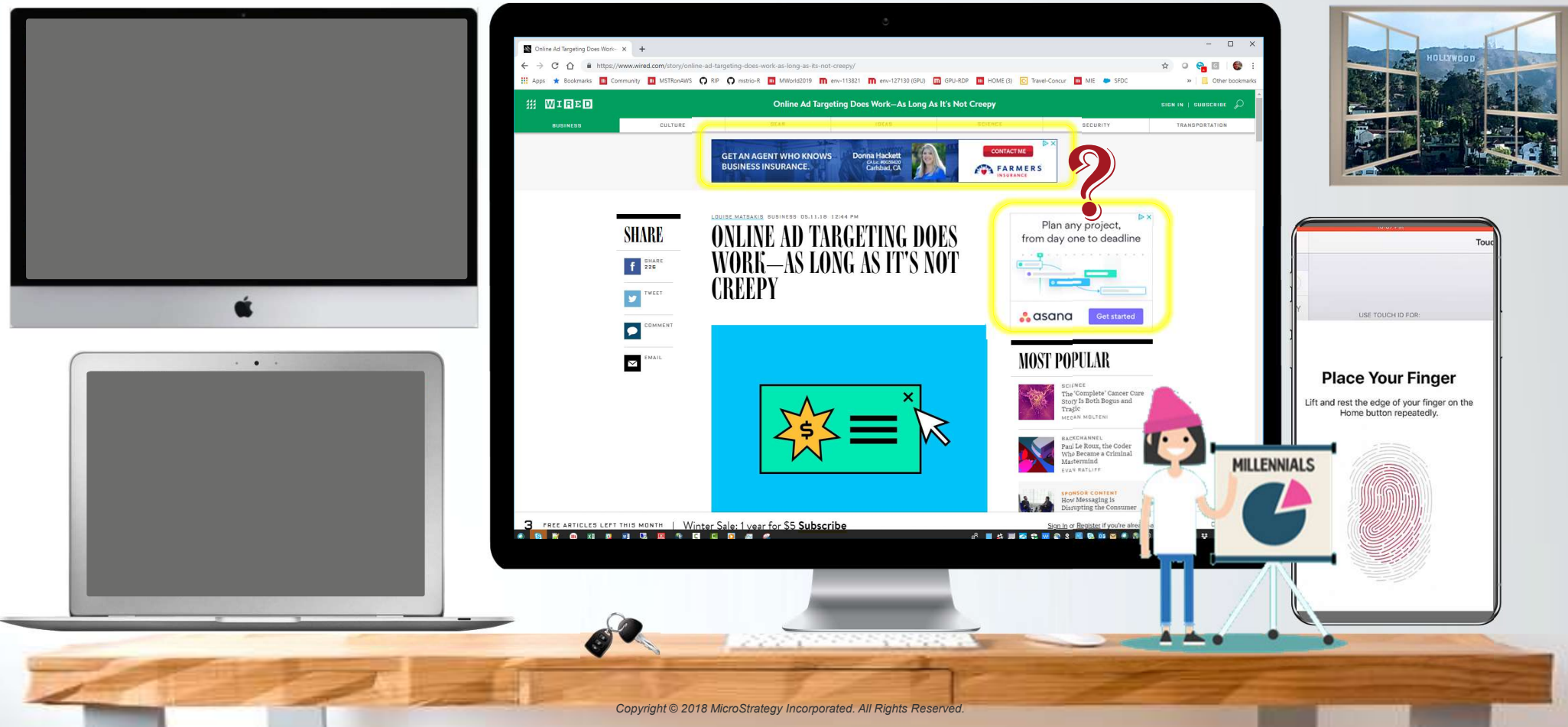
Machine Learning in Action



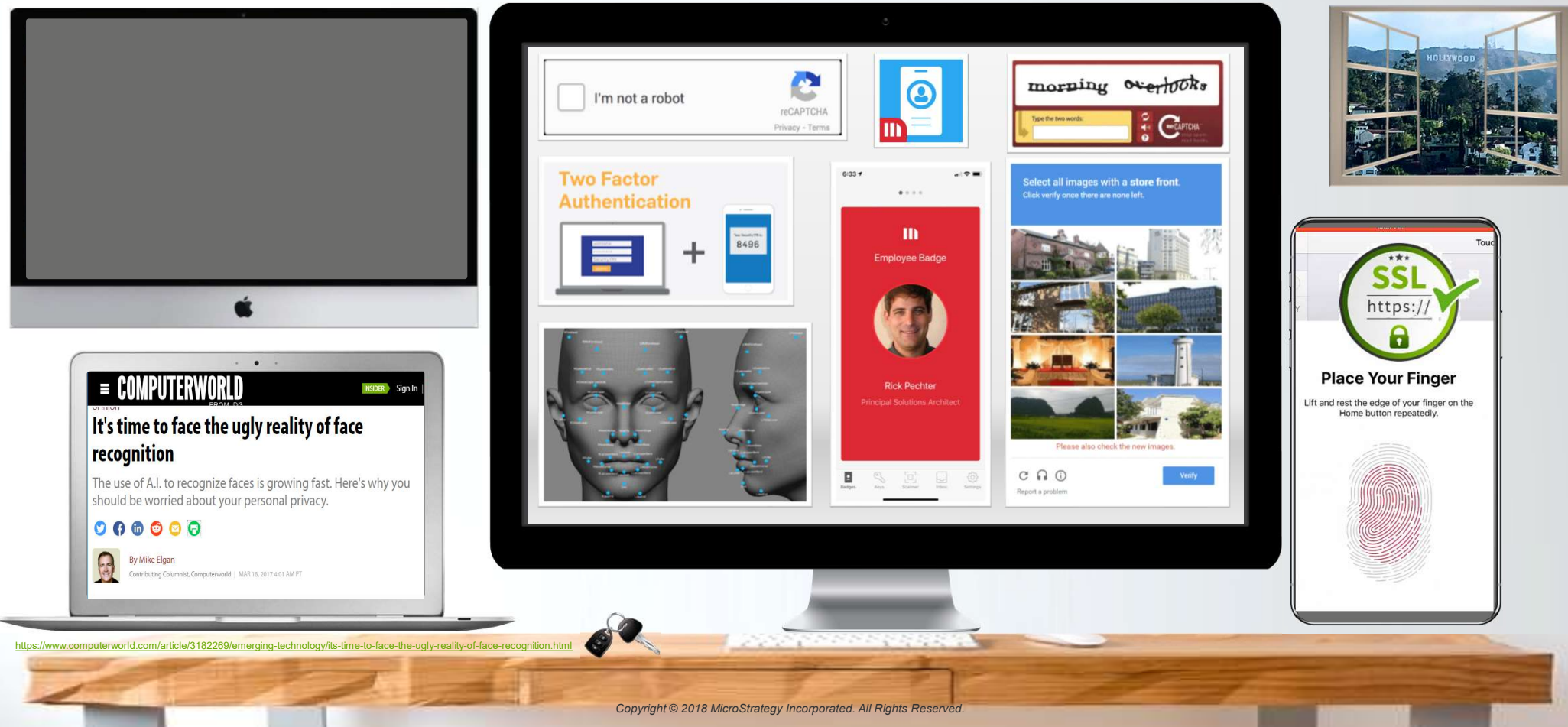
Machine Learning in Action



Machine Learning in Action



Users vs. AI vs. Hackers: An Accelerating Arms Race

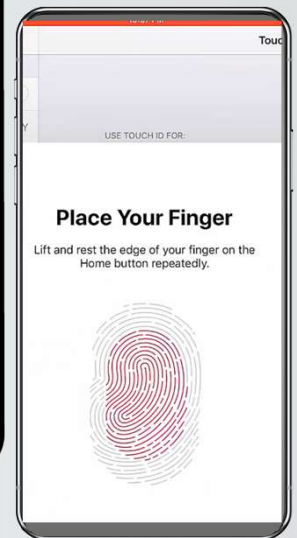
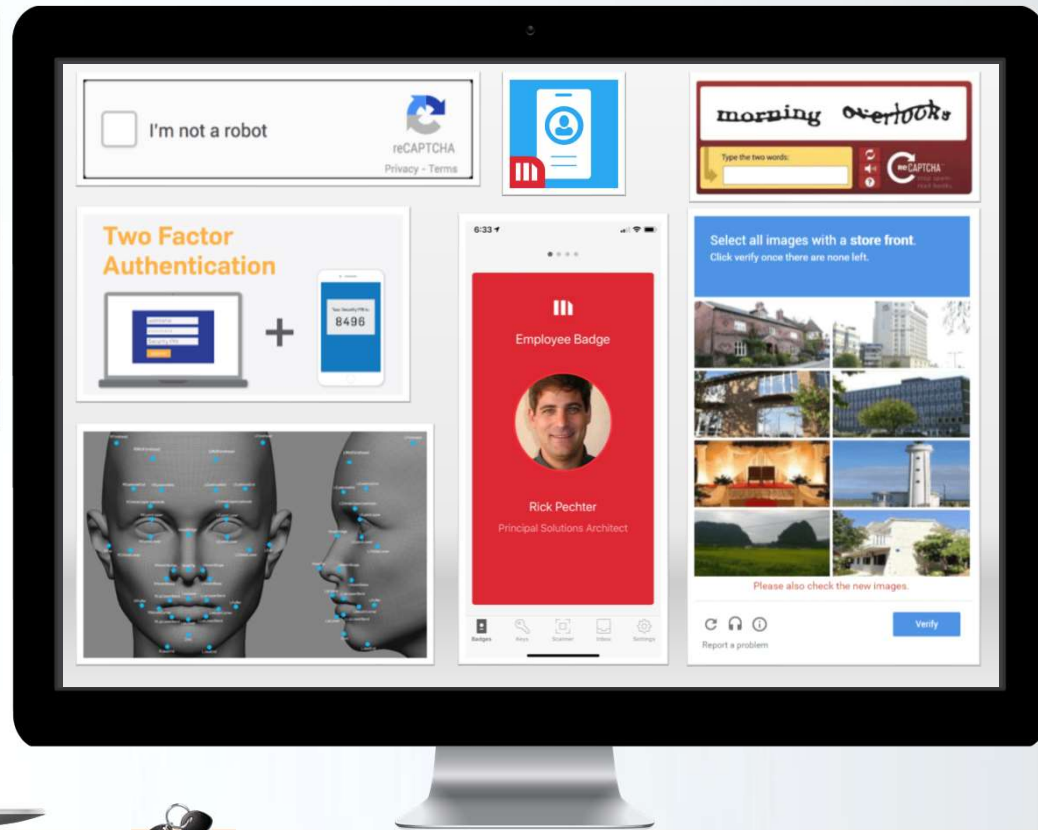


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Users vs. AI vs. Hackers: An Accelerating Arms Race



<https://www.msnbc.com/veishi-ruhle/watch/artificial-intelligence-is-being-used-to-write-fake-news-stories-1444419651639>

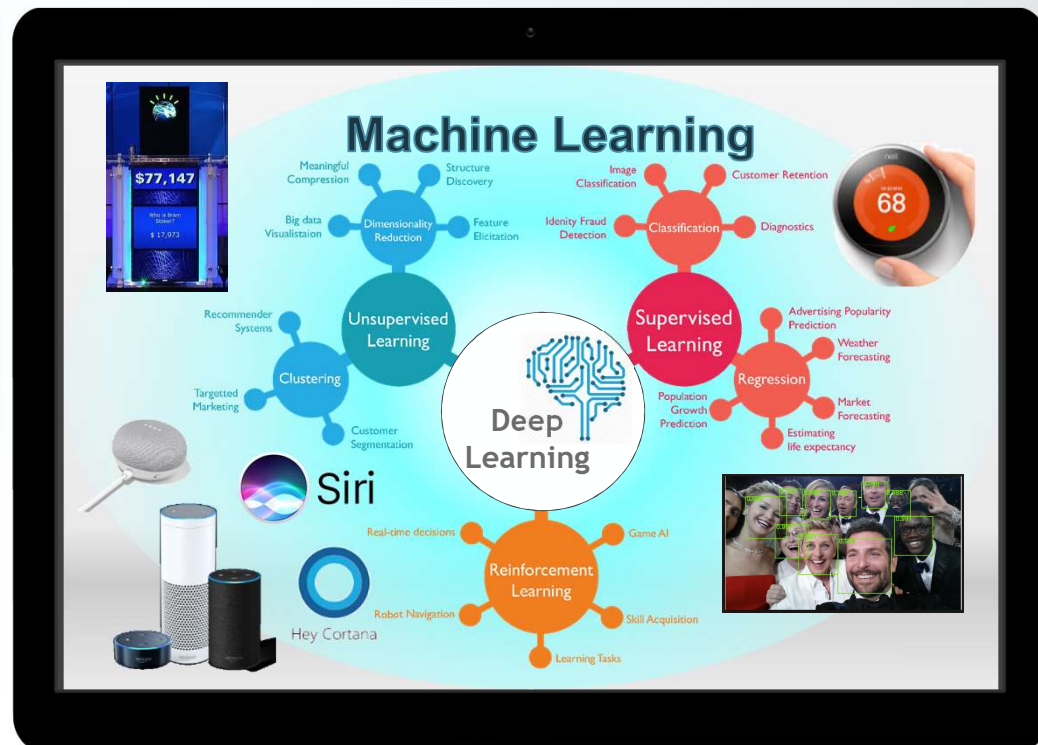


The Difference between Learning and Intelligence

Learning is the ability to extract patterns from knowledge

2 Requirements for Machine Learning

- 1) Represent Knowledge
- 2) Extract Patterns



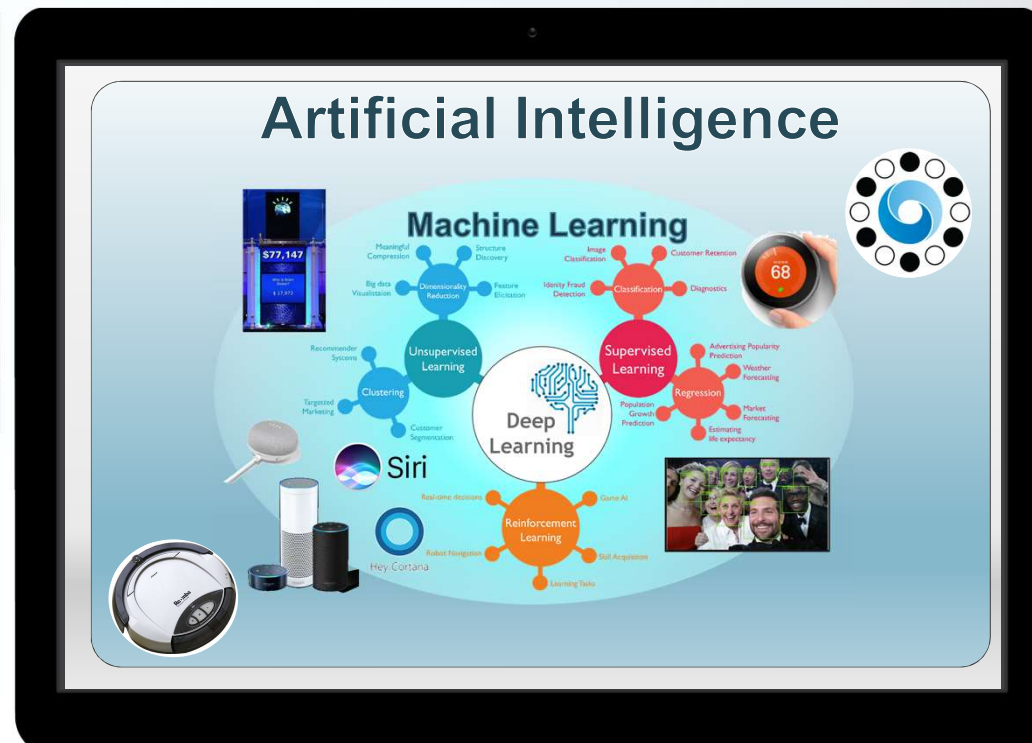
The Difference between Learning and Intelligence

Intelligence is the ability to apply learning into action

3 Requirements for Artificial Intelligence

- 1) Represent Knowledge
- 2) Extract Patterns
- 3) Agency - Ability to Act

*The difference between
Learning
and
Intelligence
is
Agency*



Not AI:

- Predictive Models
- Text/Image Classifiers
- Rules of Thumb
- Non-Smart Controllers

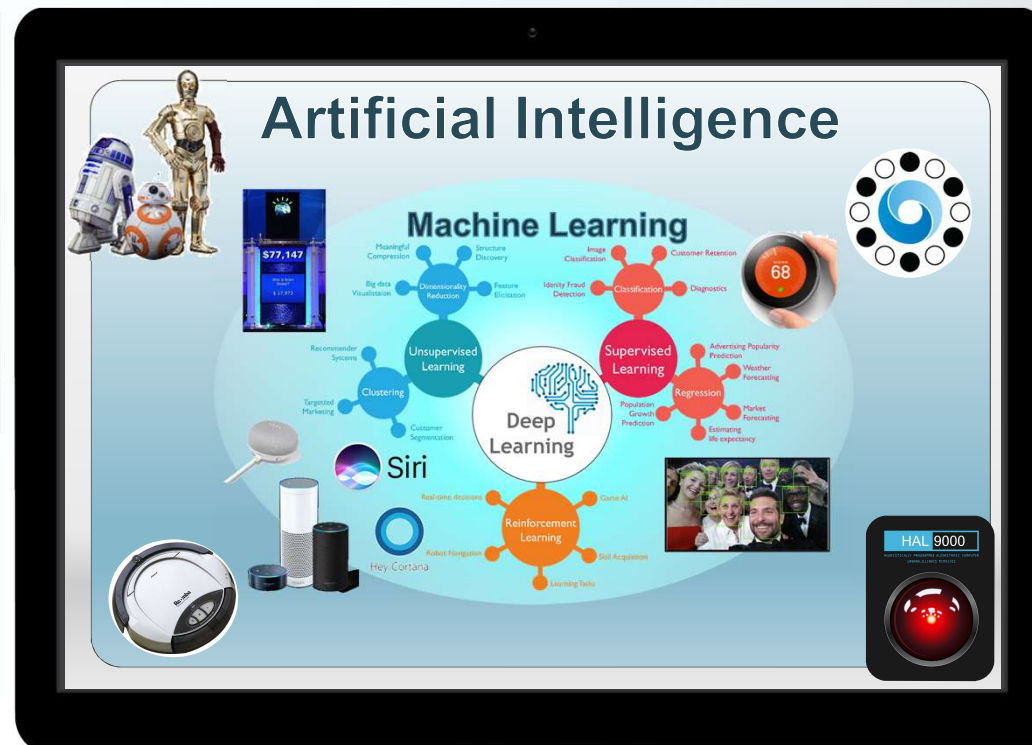
The Difference between Learning and Intelligence

(for completeness, the *Ability to Reason* is a hallmark of General AI)

4 Requirements for General AI

- 1) Represent Knowledge
- 2) Extract Patterns
- 3) Agency - Ability to Act
- 4) Reasoning (General AI)

*The difference between
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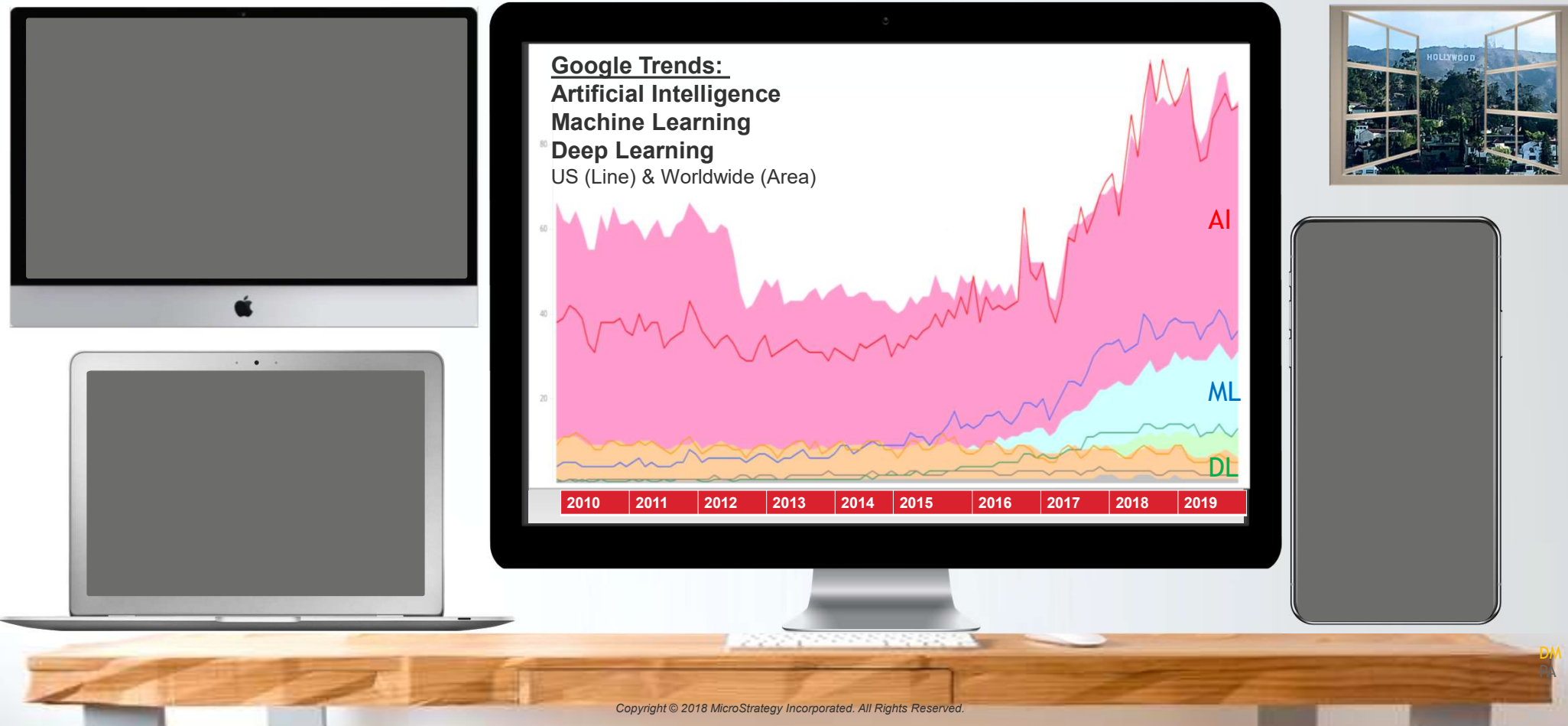


Not AI:

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Google Trends: AI, DL, ML

Have we plateaued?



Virtually All Major Tech Companies have Open ML/DL Platforms

And this is in addition to all the other technologies our customers use



Company	Cloud-based ML Platform	Open Source DL Platform
Google	Google-NEXT	TensorFlow
Baidu		Deep Speech
Amazon	Amazon ML	DSSTNE (Destiny)
Yahoo		CaffeOnSpark
Facebook		TorchNet
IBM	IBM Watson Analytics	IBM System ML
Twitter		TwitterCortex
		Computational Network Toolkit (CNTK)
Microsoft	Azure ML	

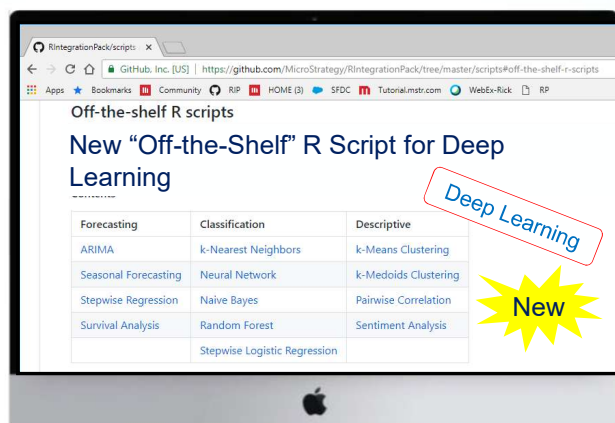


Deep Learning in Action

Text Classifier

Not shown:

- Error Handling/Logging
- R Script Task Logging
- Out-of-Band outputs including training plots, scored datasets
- .Rdata files capturing complete R environment
- mstrio support



DEMO : Text Classifier

Check-out 2min Videos:

- Tinyurl.com/MicroStrategyDL
- Tinyurl.com/MicroStrategyDL2

Key Features:

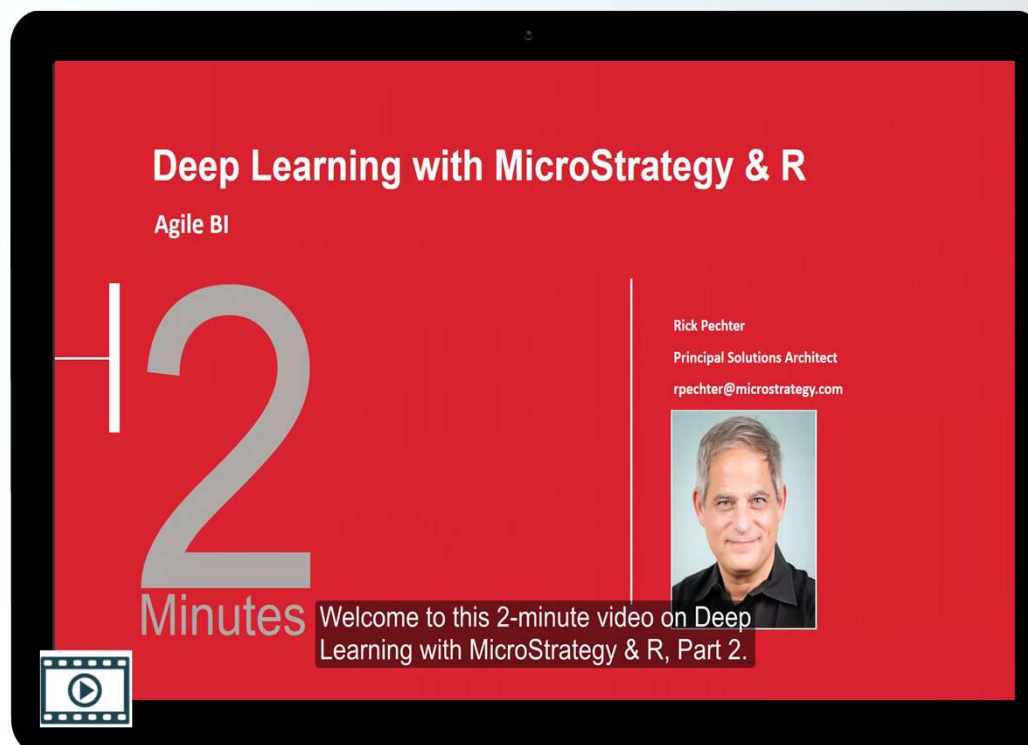
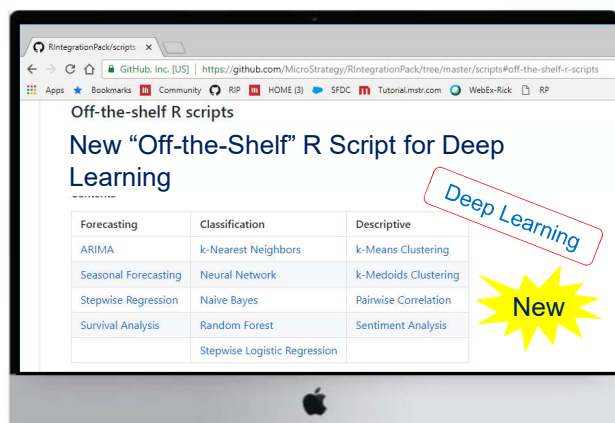
- Keras and TensorFlow
- User Defined Params.
- Deploy to any Editor
- One script does it all!
- RStudio: Local data
- MSTR: Governed data
- Champion-Challenger Model Selection
- Choice of quality stats
- User Configurable
- Users *No Touch Code*

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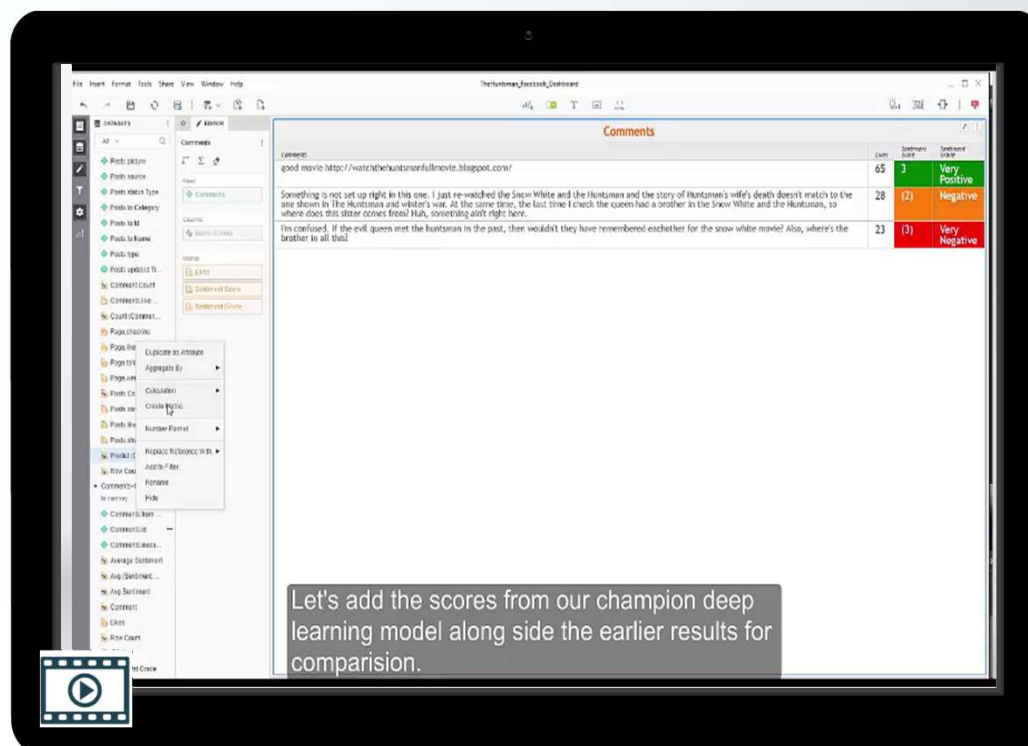
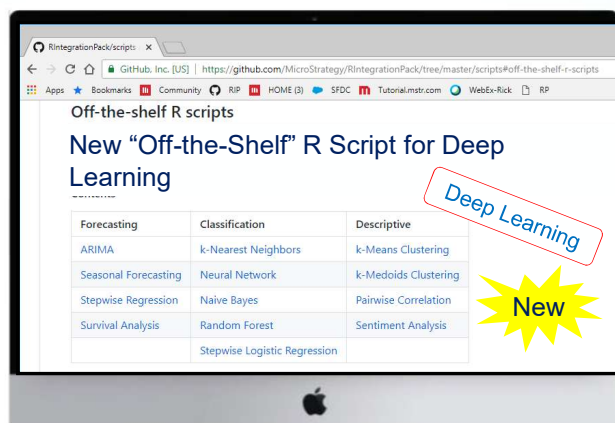
- [Tinyurl.com/MicroStrategyDL](https://tinyurl.com/MicroStrategyDL)
- [Tinyurl.com/MicroStrategyDL2](https://tinyurl.com/MicroStrategyDL2)

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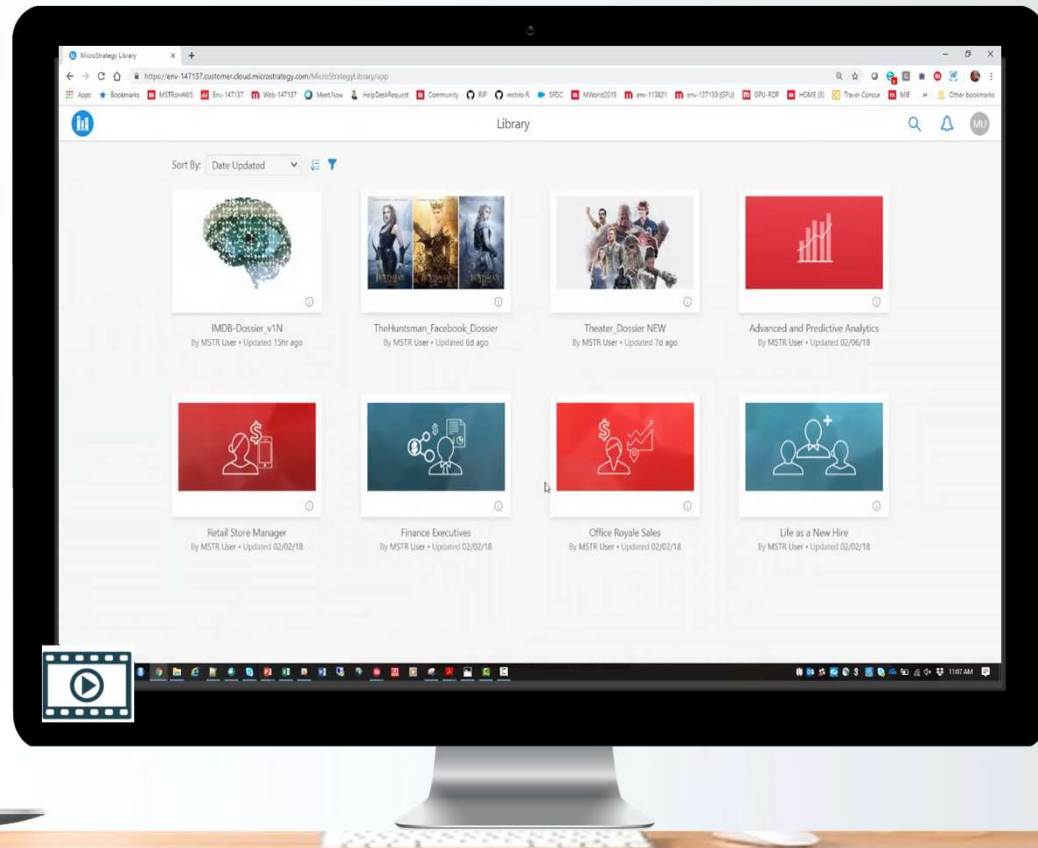
Key Features:

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1. Freedom to pursue uncertain goals
2. Make AI more explainable to humans
3. Be an active agent in the ecosystem

Be an Active Agent in the Ecosystem Using MicroStrategy HyperIntelligence®

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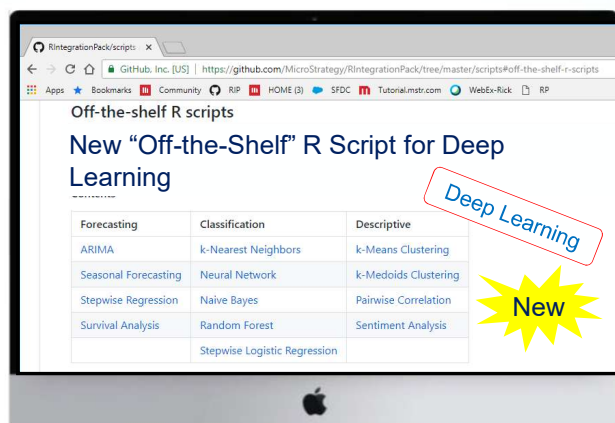


Deep Learning in Action

Making Deep Learning Explainable - “Citizen AI”-Style

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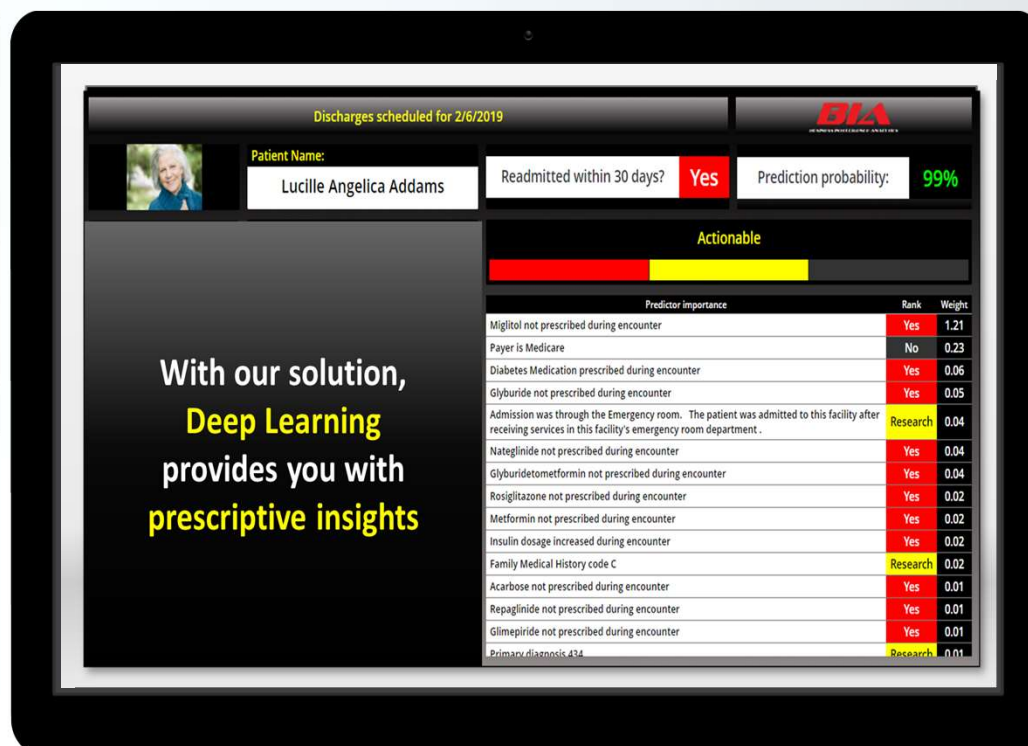
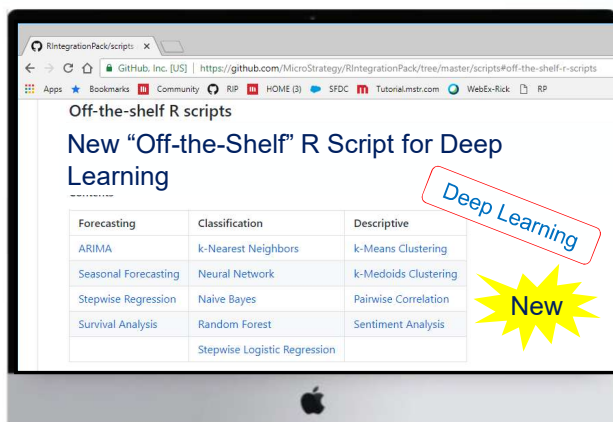
Will Lucille get readmitted within 30 days?

Deep Learning in Action

Making Deep Learning Explainable - “Citizen AI”-Style

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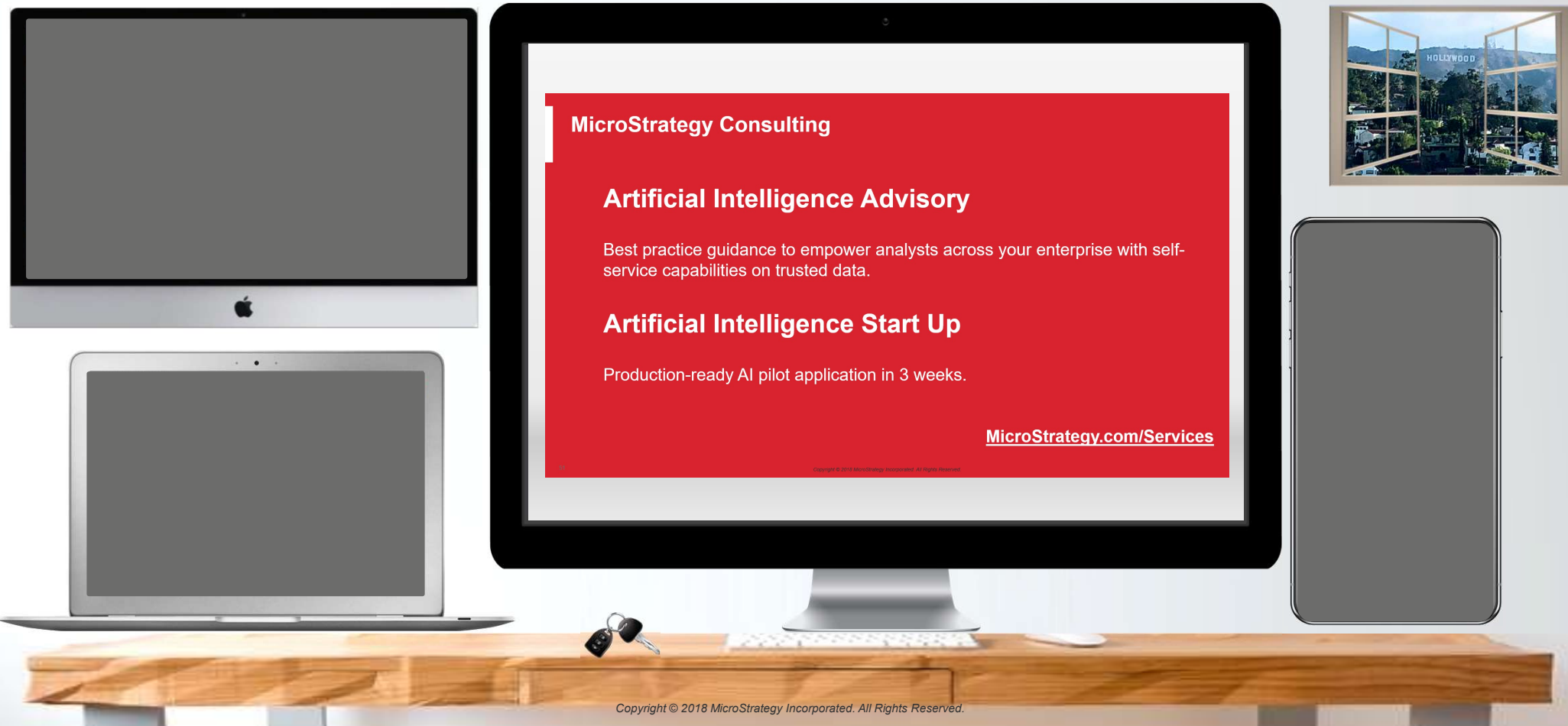
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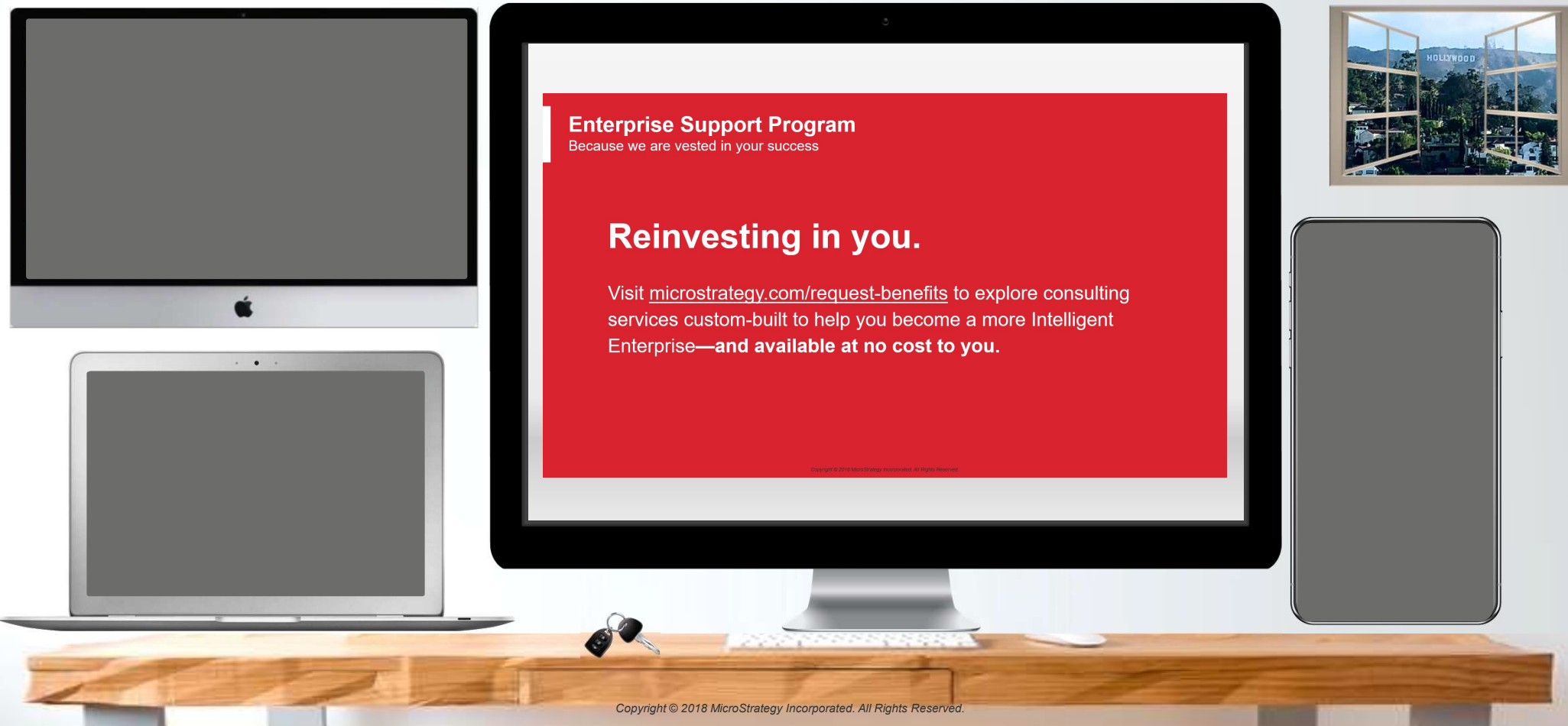
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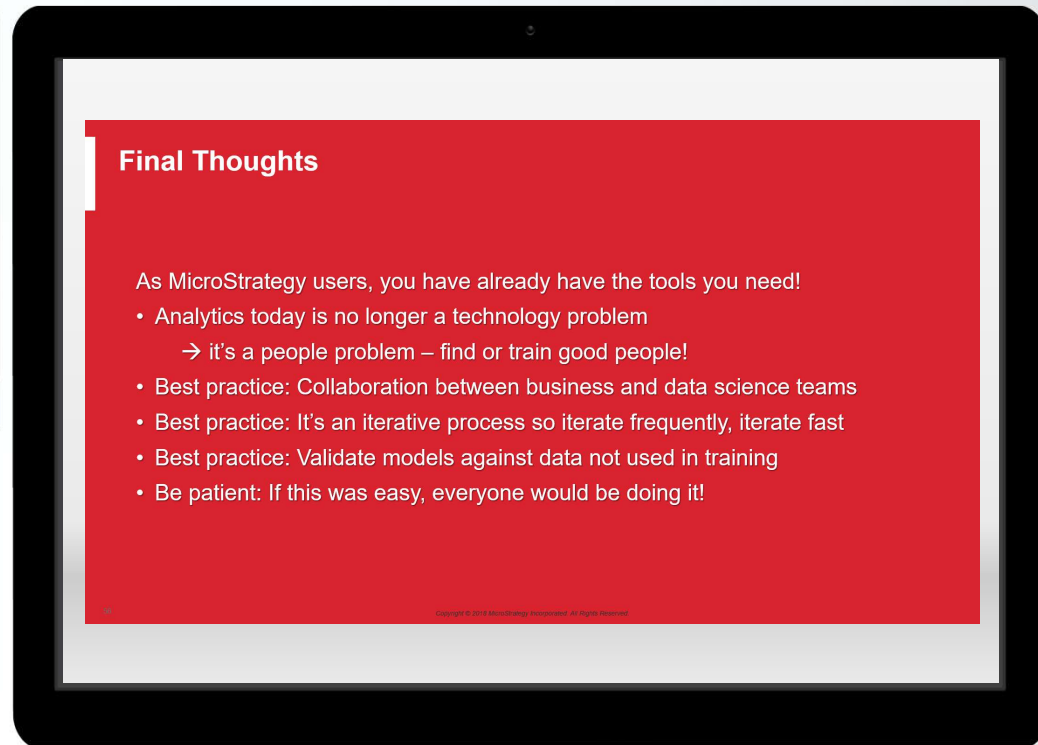
Next Steps:



Next Steps:



Next Steps:



Open Letter to All the AIs Out There:

Adapted from "Nothing About Me" by Sting
from Ten Summoner's Tales (A&M 1993)

Lay your hands on my browser's table
Take my fingerprints, if you are able
Pick my brains, pick my pockets
Steal my eyeballs and
Come back for the sockets
Run every kind of test from A to Z
And you'll still know nothing 'bout me

You don't need to read
no books of my history
I'm a simple man, it's no big mystery
In cold weather, a hand needs a glove

*When I need you,
All I need is to feel the love!*

Run my name thru your computer
Mention me in passing to
your college tutor
Check my records, check my facts
Check if I paid my income tax
Pore over everything in my C.V.
But you'll still know nothing 'bout me

Search my house
with a fine tooth comb
Turn over everything
'cause I won't be home
Set up your microscope
and tell me what you see
And you'll still know nothing 'bout me



*The best AI
is the AI
that makes you
feel the love*

