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Kopi - Coffee with Condensed Milk
("Kopi" in Malay language means "Coffee")

Kopi O - Coffee with Sugar
("O" in Hokkien Dialect means "Black")

Kopi C - Coffee with Sugar & Evaporated Milk
("C" in Hainese Dialect means "Fresh")

Kopi O Kosong - Coffee without Sugar & Condensed Milk
("Kosong" in Malay Language means "Empty")

Kopi Peng - Iced Coffee
("Peng" in Hokkien Dialect means "Ice")

Kopi Siew Dai - Coffee with Less Sweet
("Siew Dai" in Hock Chew Dialect means "Less Sweet")

Kopi Ga Dai - Coffee with More Sweet
("Ga Dai" in Hock Chew Dialect means "More Sweet")

Kopi Gao - Coffee Thick
("Gao" in Hokkien Dialect means "Thick")

Kopi Di Lo - Coffee Extra Thick
("Di Lo" in Hokkien Dialect means "Pour All The Way")

Kopi Poh - Coffee Thin
("Poh" in Hokkien Dialect means "Thin")

Kopi Sua - Double Order of Same Coffee
("Sua" in Chinese Hokkien Dialect means "Follow")

Tiao He - Chinese Tea
(Fishing in Hokkien Dialect, the motion of dipping the teabag is like fishing)

Tak Giu - Milo
(Soccer in Hokkien Dialect, Milo TV ad featuring Soccer in early year)

Ideas to let go

Ideas that should die

we help people
see and understand data

people who know the data
should ask the questions

Modern BI

software should be
designed for deeper thinking

analytics at scale
can drive change

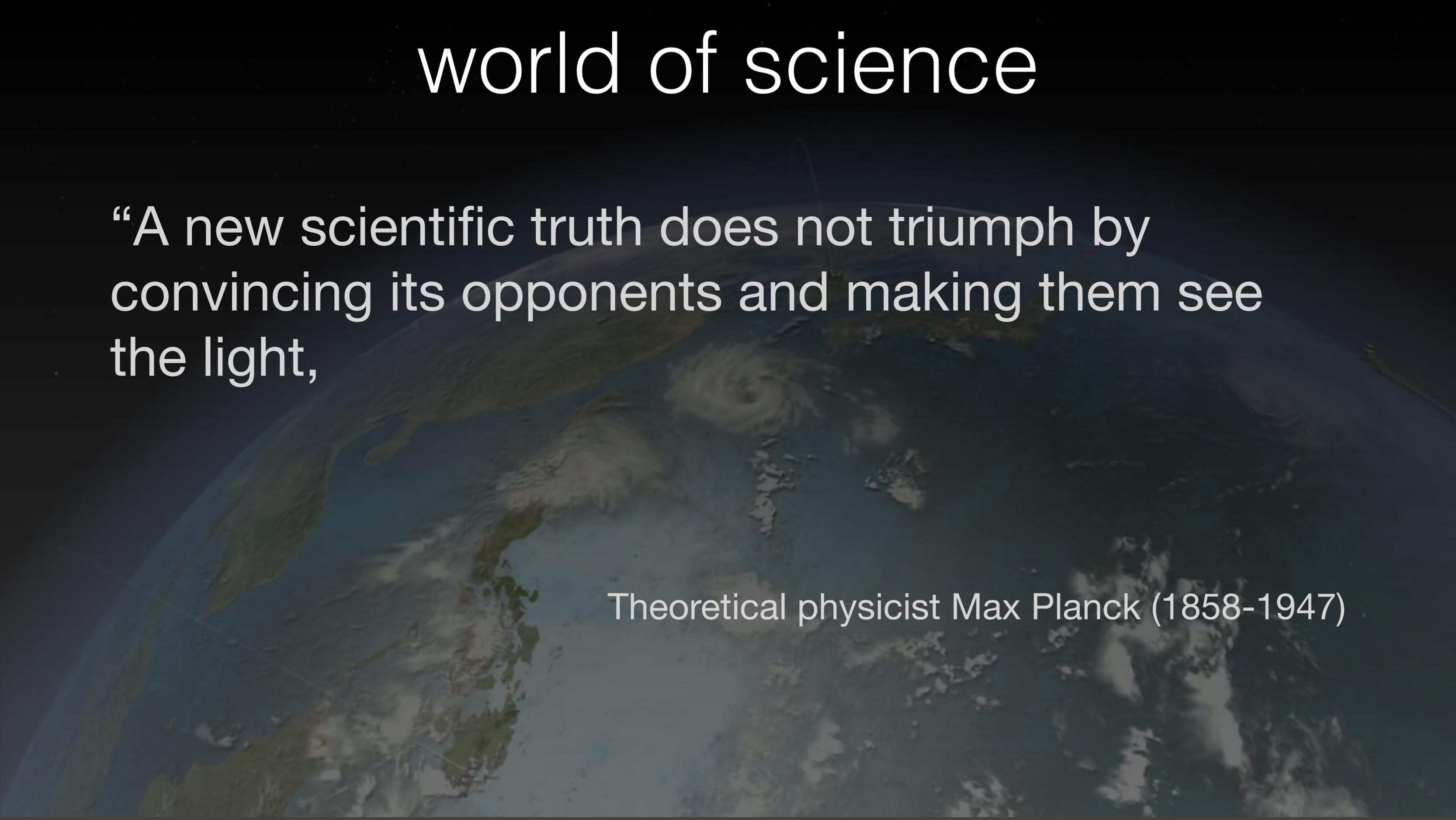


world of science



Theoretical physicist Max Planck (1858-1947)

world of science



“A new scientific truth does not triumph by convincing its opponents and making them see the light,

Theoretical physicist Max Planck (1858-1947)

world of science

“A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die,

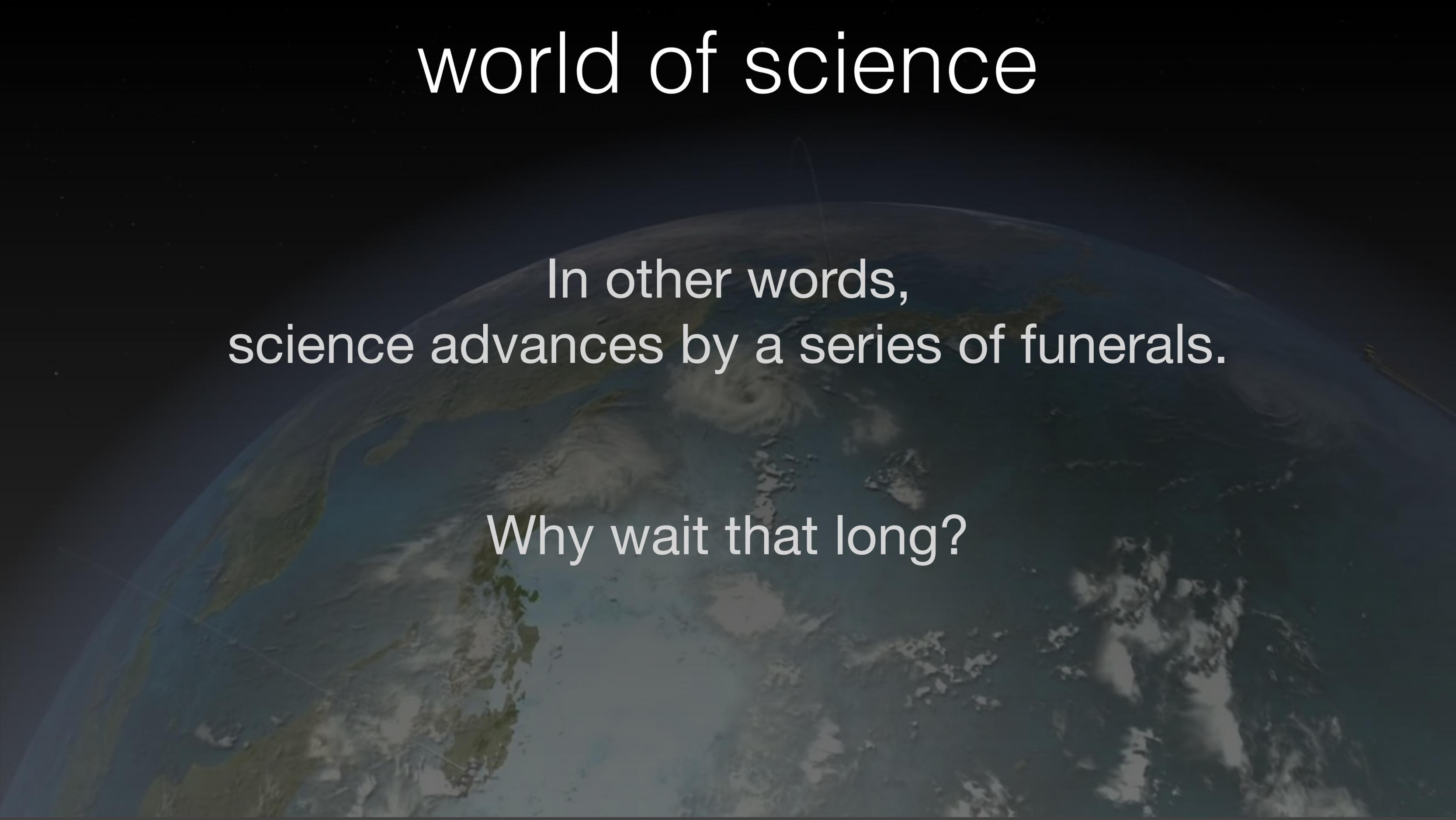
Theoretical physicist Max Planck (1858-1947)

world of science

“A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it.”

Theoretical physicist Max Planck (1858-1947)

world of science



In other words,
science advances by a series of funerals.

Why wait that long?



ideas that should die

In the beginning ...



RFP*

Request for Proposal

* not in all cases





RFP, one easy document to kill innovation



A Request for Proposal (RFP) is used when you know you have a problem but don't know how you want to solve it.

Wikipedia

Ask questions

oh YES



Support Modern GUI interface

Solution needs to be intuitive and
easy to use

Users can select colour schemes
for maps, charts



the HOW

Schedule reports and specify filenames for the reports

Ability to produce pie charts, spider charts, bubble charts

Dashboard has configurable traffic light functionality

RIP

Instead of starting with technology,
we need to start with people and culture.

open-ended questions
open to interpretation
open to innovation

business requirement

vs

solution

Build me a car

What is a car?

Interface

Implementation

carry people
drive
turn
wheels
roadworthy

slow, air-cooled



7 seater, diesel



hybrid, cheap



2 seater, convertible



fast, petrol



electric, autonomous



What is a car?

Requirement

Solution

carry people
drive
turn
wheels
roadworthy

slow, air-cooled



7 seater, diesel



hybrid, cheap



2 seater, convertible



fast, petrol



electric, autonomous



What is a car?

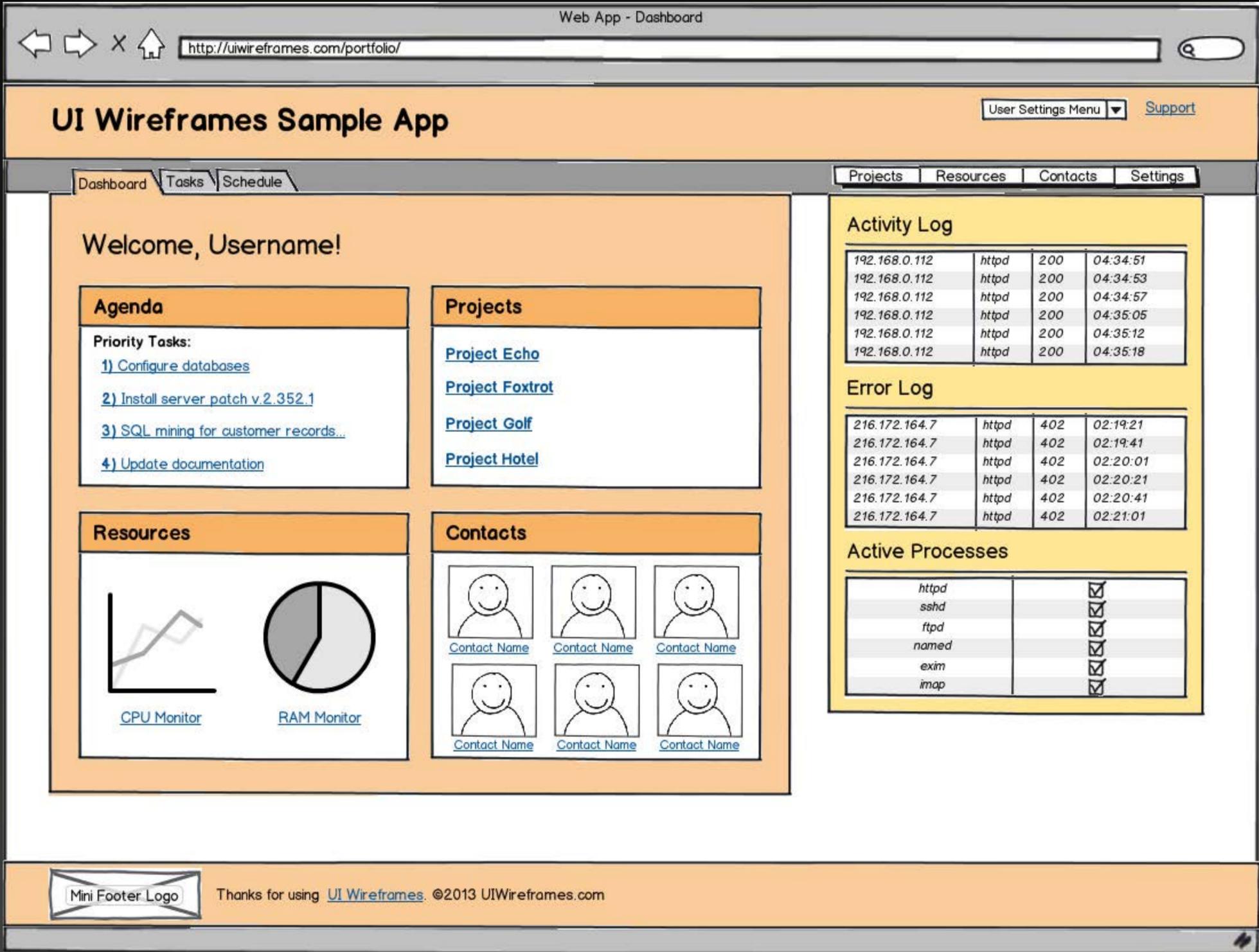
Business requirement – exhibit A

<Company Name>
 Plan versus Actual Variance Report—Financial Services
 <Date>

Data cell key
 Data input cells
 Formula cells: Totals are calculated and filled in automatically.

Line Item	January	February	March	Q1	April	May	June	Q2	July	August	September	Q3	October	November	December	Q4	Annual	Variance analysis notes
INCOME STATEMENT																		
Interest income																		
Plan	\$65,000	\$75,000	\$85,000	\$225,000	\$75,000	\$80,000	\$90,000	\$245,000	\$90,000	\$100,000	\$105,000	\$295,000	\$120,000	\$130,000	\$145,000	\$395,000	\$1,160,000	
Actual	\$60,000	\$70,000	\$88,000	\$218,000	\$95,000	\$65,000	\$88,000	\$248,000	\$95,000	\$110,000	\$100,000	\$305,000	\$115,000	\$120,000	\$165,000	\$400,000	\$1,171,000	
Variance \$ (Actual - Plan)	(\$5,000)	(\$5,000)	\$3,000	(\$7,000)	\$20,000	(\$15,000)	(\$2,000)	\$3,000	\$5,000	\$10,000	(\$5,000)	\$10,000	(\$5,000)	(\$10,000)	\$20,000	\$5,000	\$11,000	
Variance %	-7.69%	-6.67%	3.53%	-3.11%	26.67%	-18.75%	-2.22%	1.22%	5.56%	10.00%	-4.76%	3.39%	-4.17%	-7.69%	13.79%	1.27%	0.95%	
Interest expense																		
Plan	\$50,000	\$55,000	\$65,000	\$170,000	\$55,000	\$60,000	\$70,000	\$185,000	\$50,000	\$55,000	\$65,000	\$170,000	\$50,000	\$55,000	\$65,000	\$170,000	\$895,000	
Actual	\$45,000	\$55,000	\$63,000	\$163,000	\$45,000	\$55,000	\$63,000	\$163,000	\$45,000	\$55,000	\$63,000	\$163,000	\$45,000	\$55,000	\$63,000	\$163,000	\$652,000	
Variance \$ (Plan - Actual)	\$5,000	\$0	\$2,000	\$7,000	\$10,000	\$5,000	\$7,000	\$22,000	\$5,000	\$0	\$2,000	\$7,000	\$5,000	\$0	\$2,000	\$7,000	\$43,000	
Variance %	10.00%	0.00%	3.08%	4.12%	18.18%	8.33%	10.00%	11.89%	10.00%	0.00%	3.08%	4.12%	10.00%	0.00%	3.08%	4.12%	6.18%	
Bad debt/credit losses																		
Plan	\$8,000	\$3,000	\$4,000	\$15,000	\$6,000	\$7,000	\$8,000	\$21,000	\$7,500	\$8,500	\$9,000	\$25,000	\$8,000	\$10,000	\$6,500	\$24,500	\$85,500	
Actual	\$10,000	\$4,000	\$3,000	\$17,000	\$5,000	\$6,500	\$7,500	\$19,000	\$8,000	\$8,000	\$8,500	\$24,500	\$9,000	\$9,000	\$4,500	\$22,500	\$83,000	
Variance \$ (Plan - Actual)	(\$2,000)	(\$1,000)	\$1,000	(\$2,000)	\$1,000	\$500	\$500	\$2,000	(\$500)	\$500	\$500	\$500	(\$1,000)	\$1,000	\$2,000	\$2,000	\$2,500	
Variance %	-25.00%	-33.33%	25.00%	-13.33%	16.67%	7.14%	6.25%	9.52%	-6.67%	5.88%	5.56%	2.00%	-12.50%	10.00%	30.77%	8.16%	2.92%	
Noninterest income																		
Plan	\$35,000	\$40,000	\$40,000	\$115,000	\$40,000	\$40,000	\$45,000	\$125,000	\$45,000	\$45,000	\$50,000	\$140,000	\$50,000	\$55,000	\$55,000	\$160,000	\$540,000	
Actual	\$40,000	\$41,000	\$42,000	\$123,000	\$42,000	\$43,000	\$45,000	\$130,000	\$45,000	\$47,000	\$49,000	\$141,000	\$50,000	\$55,000	\$57,000	\$162,000	\$556,000	
Variance \$ (Actual - Plan)	\$5,000	\$1,000	\$2,000	\$8,000	\$2,000	\$3,000	\$0	\$5,000	\$0	\$2,000	(\$1,000)	\$1,000	\$0	\$0	\$2,000	\$2,000	\$16,000	
Variance %	14.29%	2.50%	5.00%	6.86%	5.00%	7.50%	0.00%	4.00%	0.00%	4.44%	-2.00%	0.71%	0.00%	0.00%	3.64%	1.25%	2.96%	
Noninterest expense																		
Plan	\$10,000	\$10,000	\$11,000	\$31,000	\$11,000	\$12,000	\$15,000	\$38,000	\$14,000	\$15,000	\$16,000	\$45,000	\$15,000	\$18,000	\$15,000	\$48,000	\$162,000	
Actual	\$9,000	\$10,000	\$12,000	\$31,000	\$15,000	\$13,000	\$14,000	\$42,000	\$13,500	\$14,500	\$15,500	\$43,500	\$14,000	\$22,000	\$15,500	\$51,500	\$168,000	
Variance \$ (Plan - Actual)	\$1,000	\$0	(\$1,000)	\$0	(\$4,000)	(\$1,000)	\$1,000	(\$4,000)	\$500	\$500	\$500	\$1,500	\$1,000	(\$4,000)	(\$500)	(\$3,500)	(\$6,000)	
Variance %	10.00%	0.00%	-9.09%	0.00%	-36.36%	-8.33%	6.67%	-10.53%	3.57%	3.33%	3.13%	3.33%	6.67%	-22.22%	-3.33%	-7.29%	-3.70%	
Net income																		
Plan	\$15,000	\$15,000	\$15,000	\$45,000	\$15,000	\$15,000	\$15,000	\$45,000	\$15,000	\$15,000	\$15,000	\$45,000	\$2,000	\$20,000	\$20,000	\$42,000	\$177,000	
Actual	\$16,500	\$18,000	\$15,000	\$49,500	\$13,500	\$17,000	\$16,000	\$46,500	\$12,000	\$16,000	\$18,000	\$46,000	\$21,000	\$25,000	\$24,000	\$70,000	\$212,000	
Variance \$ (Actual - Plan)	\$1,500	\$3,000	\$0	\$4,500	(\$1,500)	\$2,000	\$1,000	\$1,500	(\$3,000)	\$1,000	\$3,000	\$1,000	\$9,000	\$5,000	\$4,000	\$28,000	\$35,000	
Variance %	10.00%	20.00%	0.00%	10.00%	-10.00%	13.33%	6.67%	3.33%	-20.00%	6.67%	20.00%	2.22%	950.00%	25.00%	20.00%	66.67%	19.77%	
BALANCE SHEET																		
Cash and cash equivalents																		
Plan	\$45,000	\$45,000	\$40,000	\$43,333	\$40,000	\$42,000	\$45,000	\$42,333	\$48,000	\$52,000	\$55,000	\$51,667	\$60,000	\$65,000	\$70,000	\$65,000	\$70,000	
Actual	\$43,000	\$42,000	\$41,000	\$42,000	\$38,000	\$40,000	\$41,000	\$39,667	\$45,000	\$48,000	\$53,000	\$48,667	\$58,000	\$66,000	\$72,000	\$65,333	\$72,000	
Variance \$ (Actual - Plan)	(\$2,000)	(\$3,000)	\$1,000	(\$1,333)	(\$2,000)	(\$2,000)	(\$4,000)	(\$2,667)	(\$3,000)	(\$4,000)	(\$2,000)	(\$3,000)	(\$2,000)	\$1,000	\$2,000	\$333	\$2,000	
Variance %	-4.44%	-6.67%	2.50%	-3.08%	-5.00%	-4.76%	-8.89%	-6.30%	-6.25%	-7.69%	-3.64%	-5.81%	-3.33%	1.54%	2.86%	0.51%	2.86%	
Investment securities																		
Plan	\$100,000	\$105,000	\$110,000	\$105,000	\$115,000	\$120,000	\$125,000	\$120,000	\$125,000	\$125,000	\$120,000	\$123,333	\$115,000	\$110,000	\$100,000	\$108,333	\$100,000	
Actual	\$95,000	\$100,000	\$105,000	\$100,000	\$105,000	\$112,000	\$118,000	\$111,667	\$122,000	\$125,000	\$121,000	\$122,667	\$116,000	\$108,000	\$102,000	\$108,667	\$102,000	
Variance \$ (Actual - Plan)	(\$5,000)	(\$5,000)	(\$5,000)	(\$5,000)	(\$10,000)	(\$8,000)	(\$7,000)	(\$8,333)	(\$3,000)	\$0	\$1,000	(\$667)	\$1,000	(\$2,000)	\$2,000	\$333	\$2,000	
Variance %	-5.00%	-4.76%	-4.55%	-4.76%	-8.70%	-6.67%	-5.60%	-6.84%	-2.40%	0.00%	0.83%	-0.54%	0.87%	-1.82%	2.00%	0.31%	2.00%	
Loans																		
Plan	\$325,000	\$330,000	\$335,000	\$330,000	\$325,000	\$330,000	\$335,000	\$330,000	\$325,000	\$330,000	\$335,000	\$330,000	\$325,000	\$330,000	\$335,000	\$330,000	\$335,000	
Actual	\$338,000	\$340,000	\$342,000	\$340,000	\$338,000	\$340,000	\$342,000	\$340,000	\$338,000	\$340,000	\$342,000	\$340,000	\$338,000	\$340,000	\$342,000	\$340,000	\$342,000	
Variance \$ (Actual - Plan)	\$13,000	\$10,000	\$7,000	\$10,000	\$13,000	\$10,000	\$7,000	\$10,000	\$13,000	\$10,000	\$7,000	\$10,000	\$13,000	\$10,000	\$7,000	\$10,000	\$7,000	
Variance %	4.00%	3.03%	2.09%	3.03%	4.00%	3.03%	2.09%	3.03%	4.00%	3.03%	2.09%	3.03%	4.00%	3.03%	2.09%	3.03%	2.09%	
Accounts payable																		
Plan	\$25,000	\$28,000	\$32,000	\$28,333	\$34,000	\$35,000	\$36,000	\$35,000	\$35,000	\$34,000	\$33,000	\$34,000	\$32,000	\$31,000	\$30,000	\$31,000	\$30,000	
Actual	\$26,000	\$30,000	\$34,000	\$30,000	\$35,000	\$35,500	\$36,500	\$35,667	\$35,000	\$34,000	\$32,500	\$33,833	\$31,000	\$30,000	\$29,500	\$30,167	\$29,500	
Variance \$ (Actual - Plan)	\$1,000	\$2,000	\$2,000	\$1,667	\$1,000	\$500	\$600	\$667	\$0	\$0	(\$500)	(\$167)	(\$1,000)	(\$1,000)	(\$500)	(\$833)	(\$500)	
Variance %	4.00%	7.14%	6.25%	5.88%	2.94%	1.43%	1.39%	1.90%	0.00%	0.00%	-1.52%	-0.49%	-3.13%	-3.23%	-1.67%	-2.69%	-1.67%	
Deposits																		
Plan	\$125,000	\$48,000	\$50,000	\$74,333	\$55,000	\$55,000	\$54,000	\$54,667	\$53,000	\$52,000	\$51,000	\$52,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	
Actual	\$125,000	\$48,000	\$49,000	\$74,000	\$51,000	\$53,000	\$54,000	\$52,667	\$55,000	\$54,000	\$53,000	\$54,000	\$51,000	\$50,000	\$49,500	\$50,167	\$49,500	
Variance \$ (Actual - Plan)	\$0	\$0	(\$1,000)	(\$333)	(\$4,000)	(\$2,000)	\$0	(\$2,000)	\$2,000	\$2,000	\$2,000	\$2,000	\$1,000	\$0	(\$500)	\$167	(\$500)	
Variance %	0.00%	0.00%	-2.00%	-0.45%	-7.27%	-3.64%	0.00%	-3.66%	3.77%	3.85%	3.92%	3.85%	2.00%	0.00%	-1.00%	0.33%	-1.00%	

Business requirement – exhibit B



Business requirement – exhibit C

List all opportunities in a cross-tab

Show customer sales on a map

Export data to Excel

Export to PDF

exhibit A, B, C

What it is for?

What problem does it solve?

What action will this trigger?

What are the business objectives?

Export to PDF



Google Search

I'm Feeling Lucky



Google Search

I'm Feeling Lucky

About 827,000 results (0.57 seconds)

Tableau Software: Business Intelligence and Analytics

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Step by Step resource guide to learn Tableau - Analytics Vidhya

<https://www.analyticsvidhya.com/learning-paths...analytics.../tableau-learning-path/> ▼

Data Visualization is an inevitable aspect of business analytics. As more and ... Here is a learning path to all those people who are new to Tableau. This path will ...

Images for tableau analytics



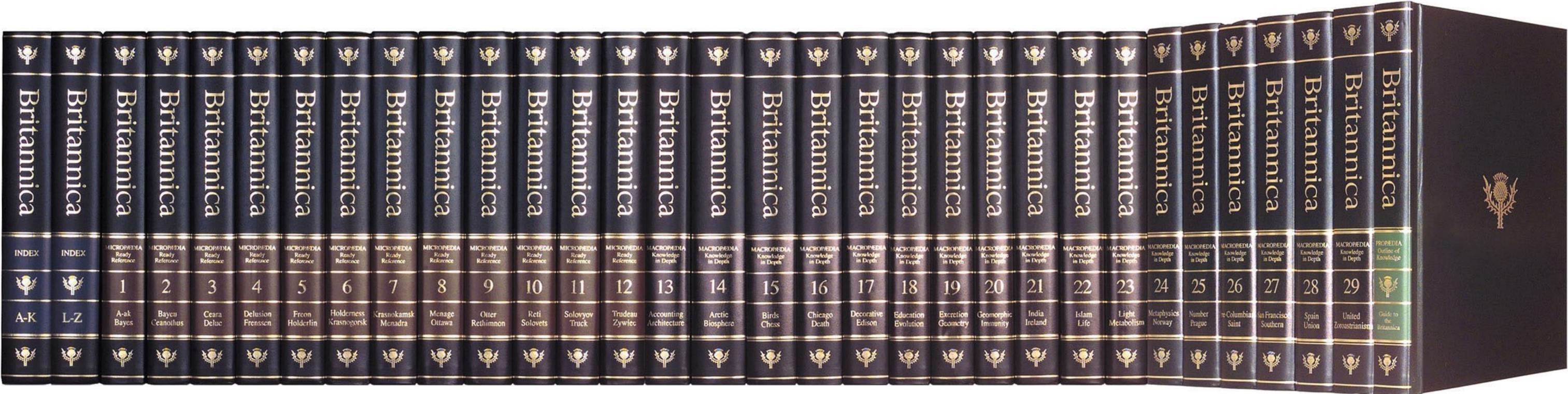
[→ More images for tableau analytics](#)

Report images

But, what if,
Google did implement *Export to PDF*



PDF is where **data** goes to die



INSPIRATION
STRATEGIC PROCESS
INQUIRY EXPERIMENT
CREATE RESEARCH
VIABILITY INSIGHT BUILD
LEARN PURPOSEFUL
PROBLEM SOLVING
EMPATHY OPTIMISM
FEASIBILITY
INNOVATION QUESTION
SHARE
DESIGN EDUCATION
HUMAN-CENTERED ENCOURAGE
PRACTICE NURTURE THINKING RECREATION
FAILURE DESIGN HOW? WHY?
OBSERVATION

Income Statement for Apple Inc (AAPL)

\$ 116.12

▲ 0.01 (+0.01%)

Volume: 14.67m

11:44 AM EST Nov 12, 2015

Statement: View:

Income [+]

in Millions of Dollars

	09/2015	09/2014	09/2013	09/2012	09/2011
Operating Revenue	233,715	182,795	170,910	156,508	108,249
Adjustments to Revenue	N/A	N/A	N/A	N/A	N/A
Cost of Revenue	128,832	104,312	99,849	84,569	62,617
Gross Operating Profit	93,626	70,537	64,304	68,662	43,818
Selling/General/Admin Expense	(14,329)	(11,993)	(10,830)	(10,040)	(7,599)
Research & Development	(8,067)	(6,041)	(4,475)	(3,381)	(2,429)
EBITDA (Operating Income Before Depreciation)	84,505	61,813	55,756	58,518	35,604
Depreciation & Amortization	(11,257)	(7,946)	(6,757)	(3,277)	(1,814)
Operating Income	73,248	53,867	48,999	55,241	33,790
Interest Income	2,921	1,795	1,616	1,088	519
Other Income, Net	(903)	(431)	1,156	(566)	(104)
Total Income Before Interest Expense (EBIT)	73,248	53,867	48,999	55,241	33,790
Interest Expense	(733)	(384)	(136)	-	N/A
Income Before Tax	72,515	53,483	50,155	55,763	34,205
Income Taxes	(19,121)	(13,973)	(13,118)	(14,030)	(8,283)
Minority Interest	-	-	-	-	-
Net Income from Continuing Operations	53,394	39,510	37,037	41,733	25,922
Net Income from Discontinued Operations	-	-	-	-	-
Net Income from Total Operations	53,394	39,510	37,037	41,733	25,922
Normalized Income	53,394	39,510	37,037	41,733	25,922
Extraordinary Income/Loss	-	-	-	-	-
Special Income/Charges	-	-	-	-	-
Income from Cum. Effect of Acct Change	-	-	-	-	-
Income from Tax Loss Carryforward	-	-	-	-	-
Other Gains	-	-	-	-	-
Total Net Income	53,394	39,510	37,037	41,733	25,922

Year-to-Date Income Statement (In 000s)

Goal met

Goal not met

• Latest month Δ to budget

Select a Region

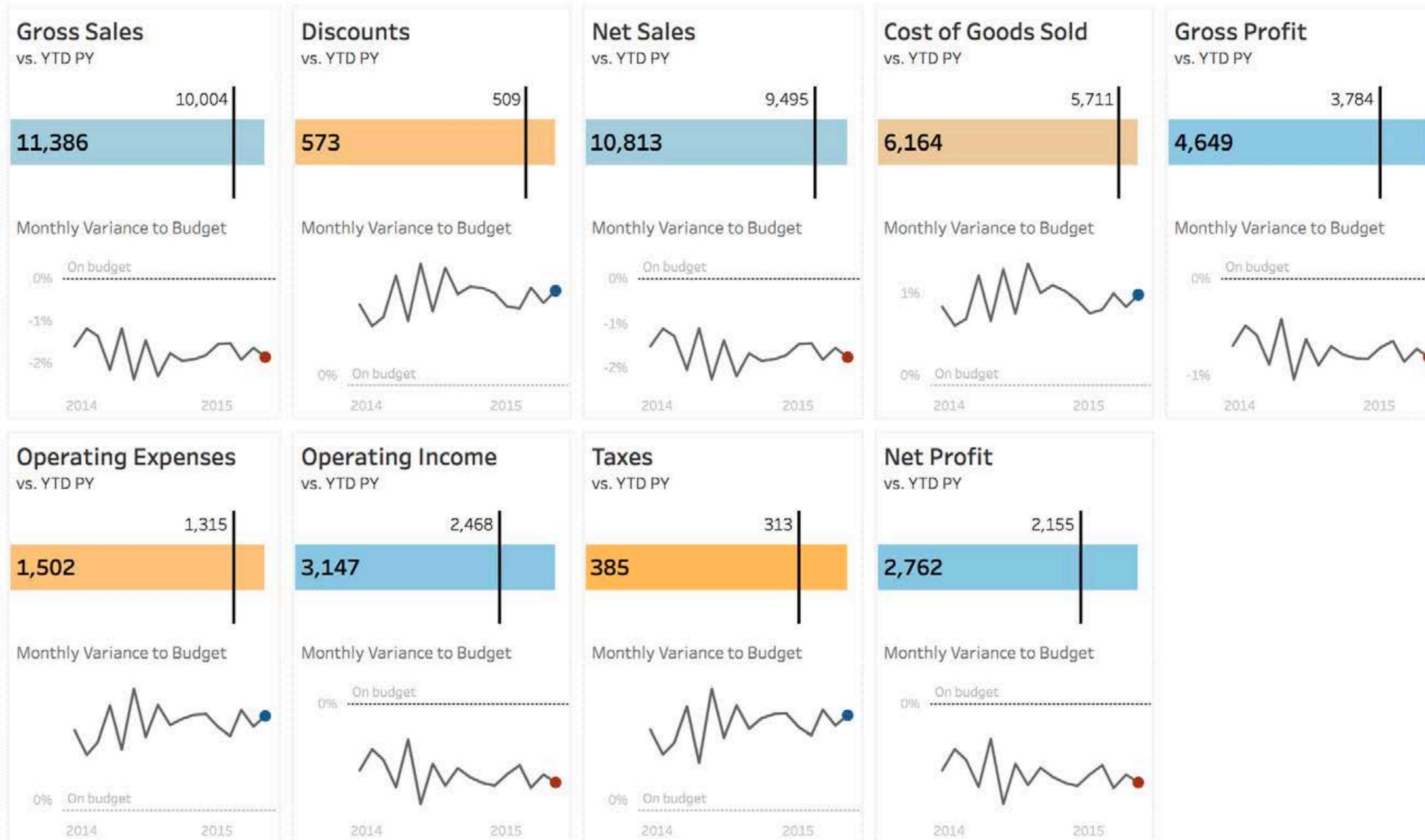
(All)

Select a Channel

(All)

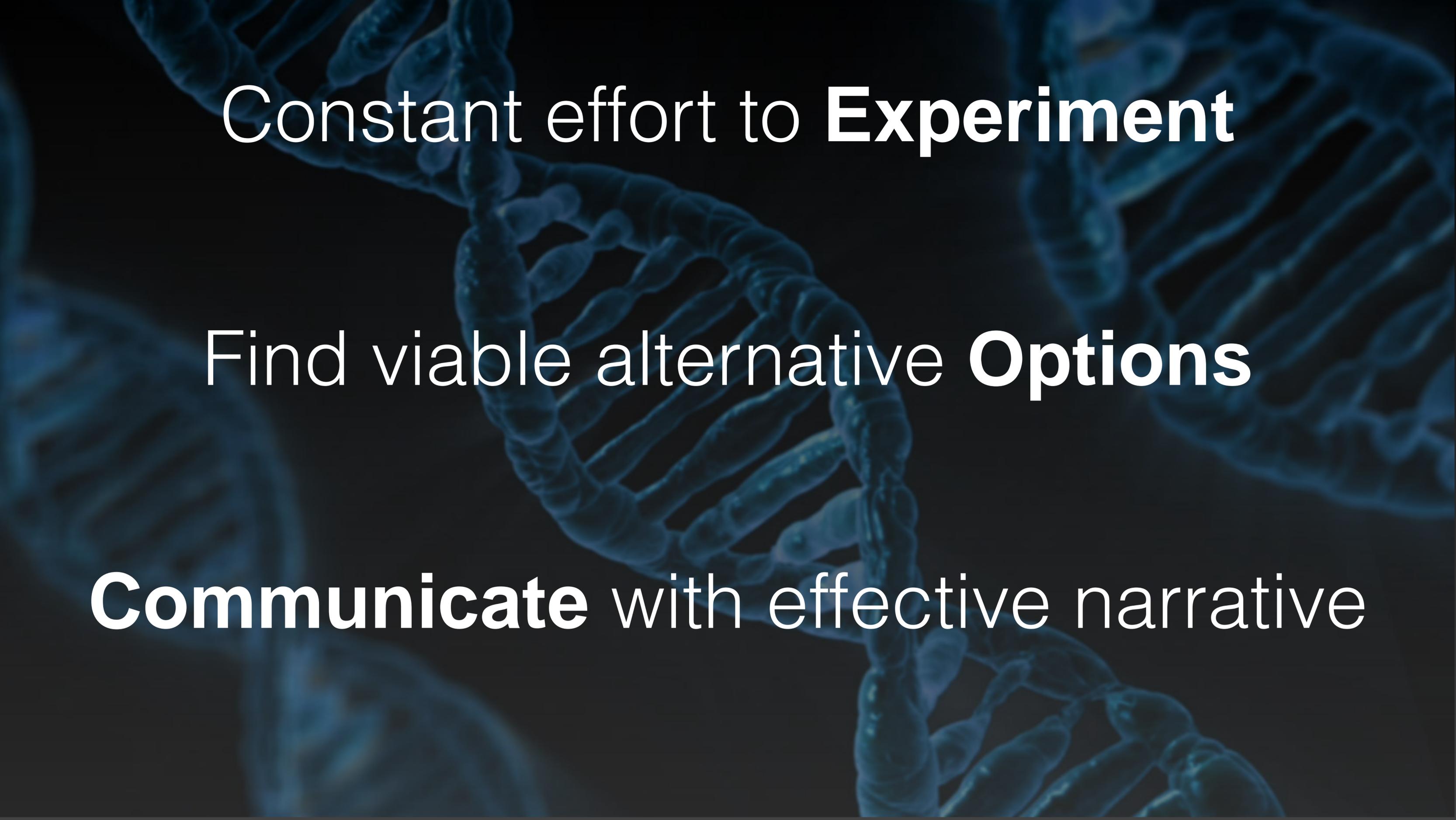
Select a Product

(All)





ideas worth sharing



Constant effort to **Experiment**

Find viable alternative **Options**

Communicate with effective narrative



Le
de TOUR
FRANCE



WIKIPE
The Free Encyc

- Main page
- Contents
- Featured conte
- Current events
- Random article
- Donate to Wikip
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Interaction

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- Permanent link
- Page informati
- Wikidata item
- Cite this page

Print/export

- Create a book
- Download as P
- Printable versio

In other project

Wikimedia Con

Record winners [edit]

Results [edit]

Stage characteristics and winners^{[26][31][30][32]}

Stage	Date	Course	Distance	Type	Winner
1	2 July	Mont Saint-Michel to Utah Beach (Sainte-Marie-du-Mont)	188 km (117 mi)	Flat stage	Mark Cavendish (GBR)
2	3 July	Saint-Lô to Cherbourg-en-Cotentin	183 km (114 mi)	Flat stage	Peter Sagan (SVK)
3	4 July	Granville to Angers	223.5 km (139 mi)	Flat stage	Mark Cavendish (GBR)
4	5 July	Saumur to Limoges	237.5 km (148 mi)	Flat stage	Marcel Kittel (GER)
5	6 July	Limoges to Le Lioran	216 km (134 mi)	Medium mountain stage	Greg Van Avermaet (BEL)
6	7 July	Arpajon-sur-Cère to Montauban	190.5 km (118 mi)	Flat stage	Mark Cavendish (GBR)
7	8 July	L'Isle-Jourdain to Lac de Payolle	162.5 km (101 mi)	Medium mountain stage	Steve Cummings (GBR)
8	9 July	Pau to Bagnères-de-Luchon	184 km (114 mi)	High mountain stage	Chris Froome (GBR)
9	10 July	Vielha Val d'Aran (Spain) to Andorra-Arcalis (Andorra)	184.5 km (115 mi)	High mountain stage	Tom Dumoulin (NED)
	11 July	Andorra		Rest day	
10	12 July	Escaldes-Engordany (Andorra) to Revel	197 km (122 mi)	Medium mountain stage	Michael Matthews (AUS)
11	13 July	Carcassonne to Montpellier	162.5 km (101 mi)	Flat stage	Peter Sagan (SVK)
12	14 July	Montpellier to Chalet Reynard (Mont Ventoux) ^[n 1]	178 km (111 mi)	High mountain stage	Thomas De Gendt (BEL)
13	15 July	Bourg-Saint-Andéol to La Caverne du Pont-d'Arc	37.5 km (23 mi)	Individual time trial	Tom Dumoulin (NED)
14	16 July	Montélimar to Villars-les-Dombes (Parc des Oiseaux)	208.5 km (130 mi)	Flat stage	Mark Cavendish (GBR)
15	17 July	Bourg-en-Bresse to Culoz	160 km (99 mi)	High mountain stage	Jarlinson Pantano (COL)
16	18 July	Moirans-en-Montagne to Bern (Switzerland)	209 km (130 mi)	Flat stage	Peter Sagan (SVK)
	19 July	Bern (Switzerland)		Rest day	
17	20 July	Bern (Switzerland) to Finhaut-Émosson (Switzerland)	184.5 km (115 mi)	High mountain stage	Ilnur Zakarin (RUS)
18	21 July	Sallanches to Megève	17 km (11 mi)	Mountain time trial	Chris Froome (GBR)
19	22 July	Albertville to Saint Gervais-les-Bains	146 km (91 mi)	High mountain stage	Romain Bardet (FRA)
20	23 July	Megève to Morzine Saint Gervais-les-Bains	146.5 km (91 mi)	High mountain stage	Jon Izagirre (ESP)
21	24 July	Chantilly to Paris (Champs-Élysées)	113 km (70 mi)	Flat stage	André Greipel (GER)
		Total			3,529 km (2,193 mi)^[33]

Race overview [edit]

How French is the Tour de France?

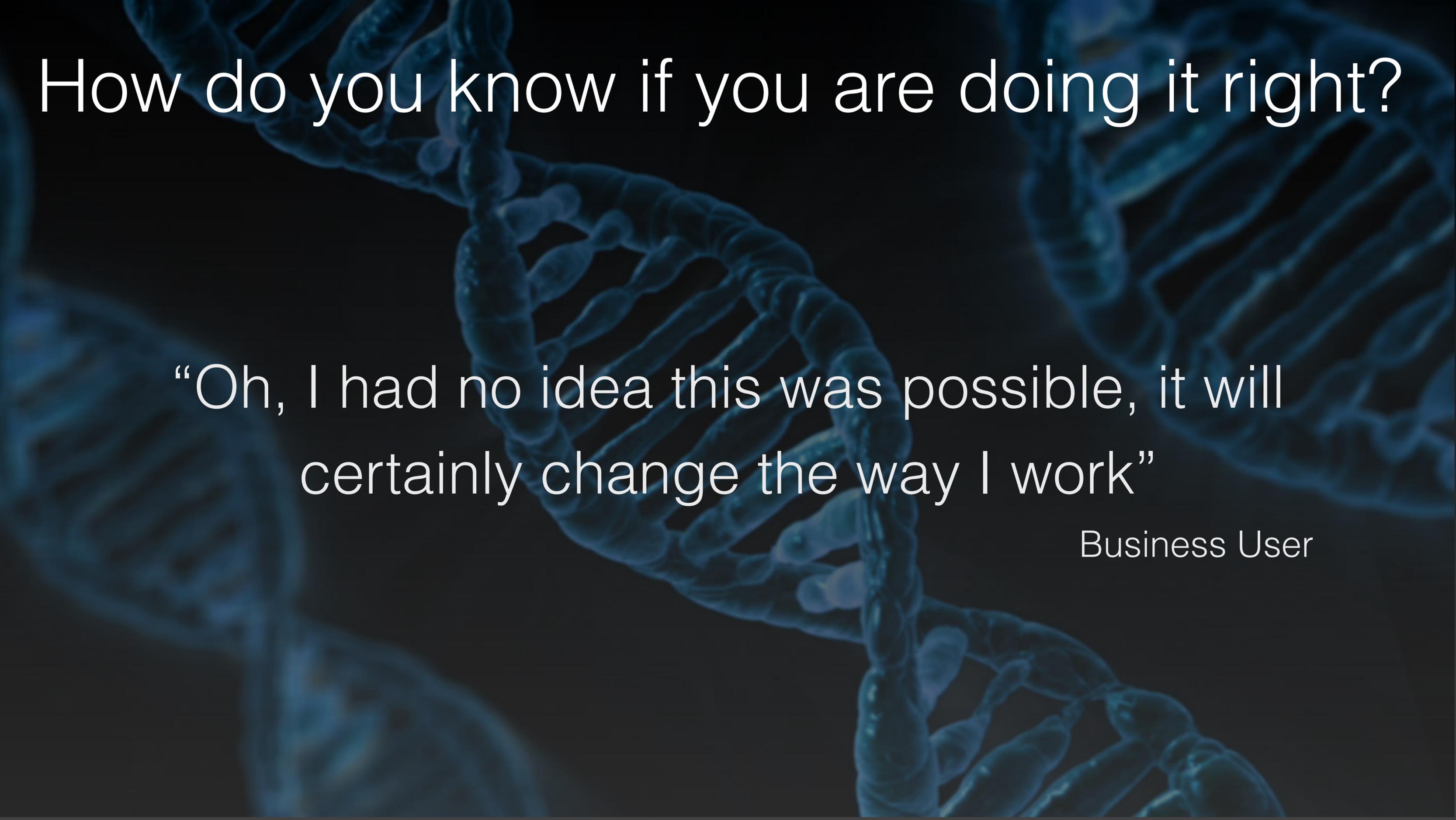
Is the race getting faster?



Data stories behind Le Tour

Google Search

I'm Feeling Lucky



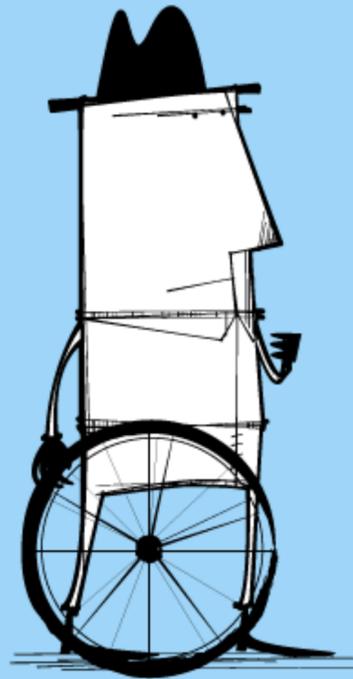
How do you know if you are doing it right?

“Oh, I had no idea this was possible, it will certainly change the way I work”

Business User

meaningful progress?

ERRR...



**CAN'T STOP.
TOO BUSY!!**





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