

Bloomberg

UX@Bloomberg

Eddie Ishak, Bloomberg LP

October 6, 2017

Q&A à l'AFI ÉGÉFI DÁ
A

This is an expurgated version of the presentation for web publication.



By the Numbers

192

Worldwide
Locations

5,000

Global
Engineers

1,500,000

News Stories
Displayed Daily

50,000,000

Distinct Streams
of Financial Data

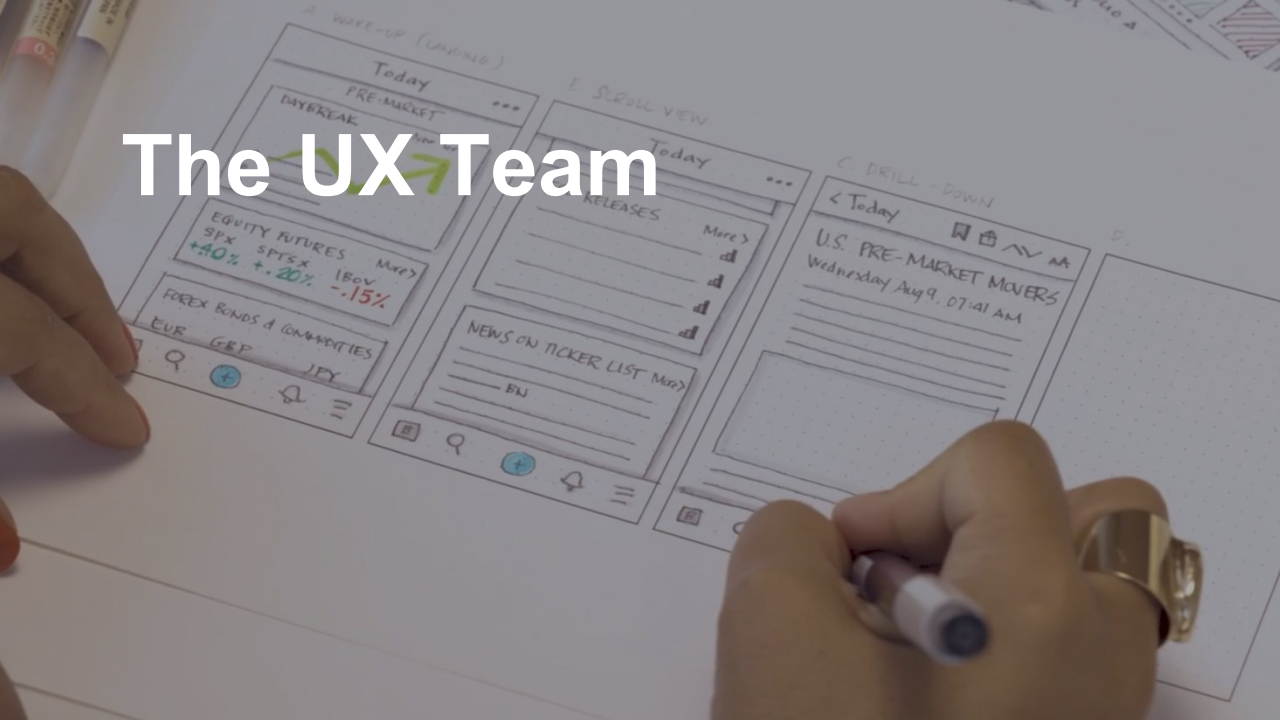
100,000,000,000

Daily Market
Data Messages

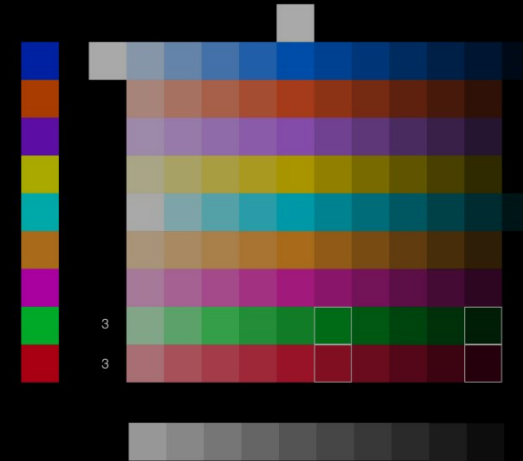
500,000,000



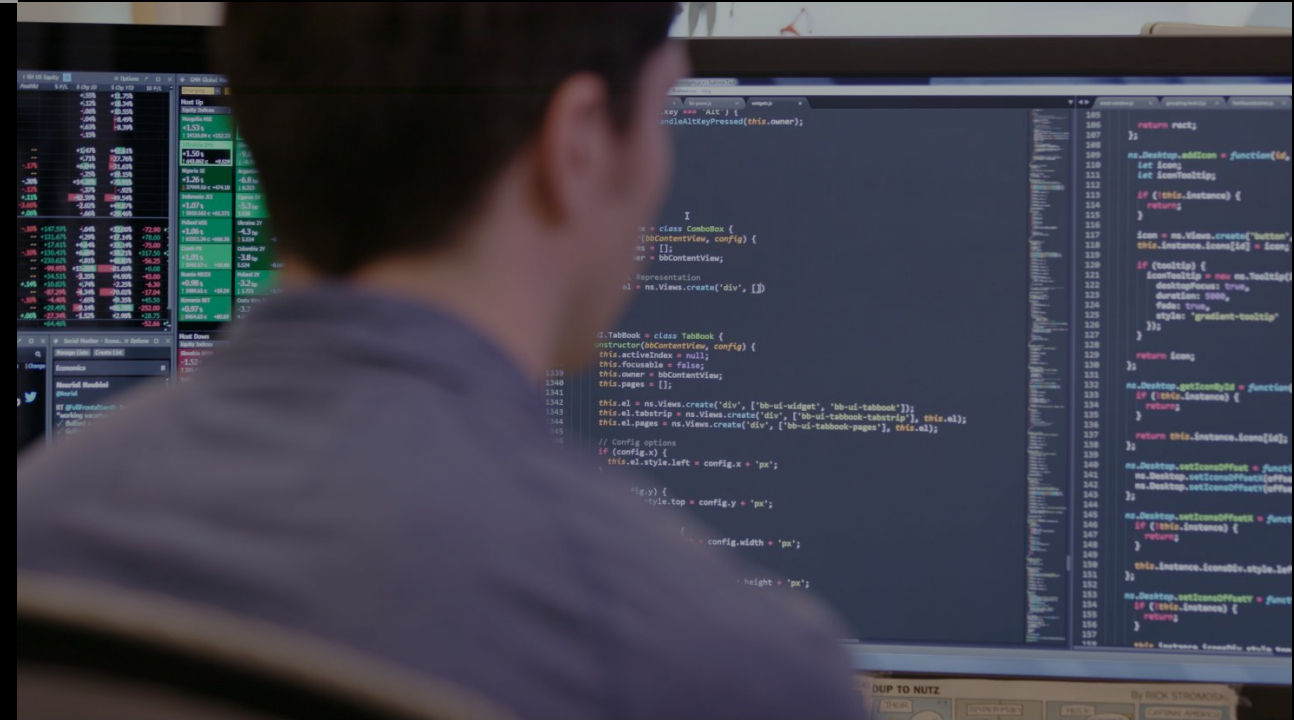
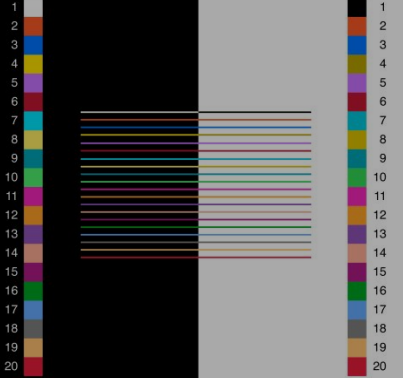
The UX Team



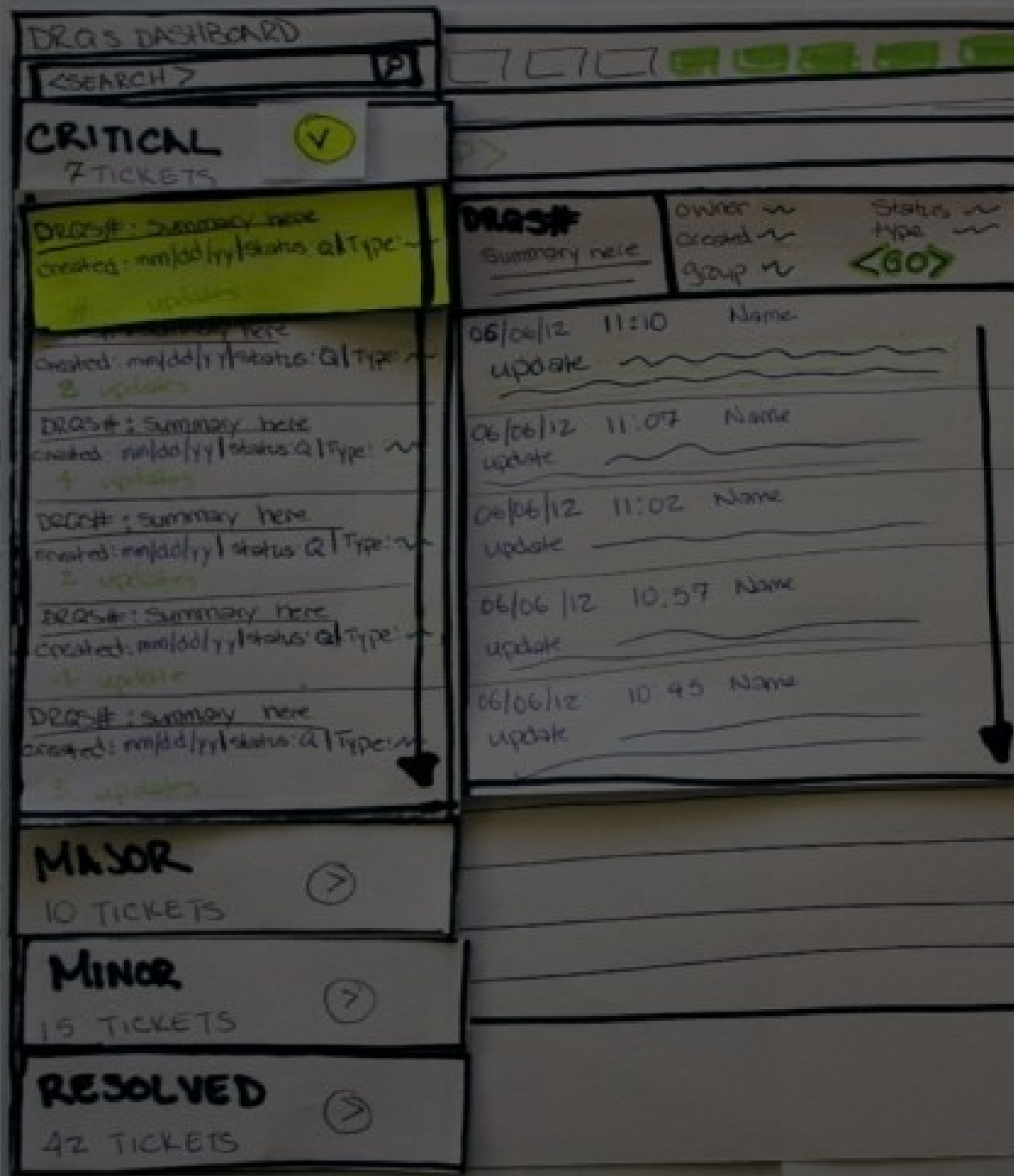
Optimized Palette



Fever Lines



Fail Fast



So...

**a Designer,
a Product Manager,
and an Engineer
walk into a bar...**

Function Design



Save View Add Page 1 Page 2 Page 3 Page 4 Page 5

International Clock

13:41:18

New York London Hong Kong Tokyo

76° 16° 31° 25°

GMH Global Macro Movers

Most Up

Equity Indices Sovereign Bonds Commodities Forex Sovereign CDS

Czech PX +1.24% 1026.08 d +12.65 -5.6 bp +2.31 134.90 c +3.05 +0.89 1.3282 +0.0139 -9.71 bp -1.82

Brazil IBOV +1.20% 12523.44 d +894.22 -1.762 1.306 d +1.90 1.79724 -0.0405 -3.37 bp -6.14

Most Down

Equity Indices Sovereign Bonds Commodities Forex Sovereign CDS

Argentina MERVAL -1.52% 23700.75 d -365.74 1.358 +9.713 -4.16 57.7071 -3.00 -0.85 57.7071 +0.4880 +2.83 bp +1.03

Slovakia SKSX -0.86% 329.71 c -2.85 5.855 +2.08 -3.69 1.59300 d -2.275 -0.80 1.4352 +0.0275 +2.17 bp +1.20

Framework Design

Time A M R Event Period Surv(H) Accal Prior Revised

09/12 06:00	NFIB Small Business Optimism	Aug	104.8	105.3	105.2	--
09/12 10:00	JOLTS Job Openings	Jul	6000	6170	6163	6116
09/13 07:00	MBA Mortgage Applications	Sep 8	--	--	3.3%	--
09/13 07:30	FBI Final Demand MoM	Aug	0.3%	--	-0.1%	--
09/13 08:30	Ex Food and Energy MoM	Aug	0.2%	--	-0.1%	--

WB: Regional Market, 10 Year, Ask, 3 Months

Country	RMI	Security	Price	Chg	Yld	Chg	Yld	Low	Range	High 3M	Chg
United States		T 2 1/4 08/27	100-22	-32	2.173	+4.2		2.039		2.386	-4.2
Canada		CAN1 06/01/27	90.804	-0.224	2.049	+2.7		1.459		2.052	+56.6
Brazil (USD)		BRAZIL6 04/26	111.695	-0.515	4.349	+6.7		4.217		5.013	-43.1
Colombia (USD)		COLON 3 1/2 27	102.355	-0.260	3.576	+3.2		3.471		3.912	+5.2
Argentina (USD)		ARGENT7 1/2 26	113.105	-0.180	5.562	+2.4		5.497		6.544	-29.0
Mexico (USD)		MEXM15 03/27	105.985	-0.250	3.410	+3.0		3.332		3.802	-10.8
EMEA											
United Kingdom		UK14 1/2 12/27	130.043	-1.024	1.132	+9.0		.923		1.313	+16.8
France		FRTR 1 05/27	102.842c	-0.629	0.696	+6.6		.579		.935	+10.4
Germany		DBR0 1/2 08/27	101.000c	-0.631	0.397	+6.4		.223		.597	+15.2
Italy		BTP52.2 06/27	101.761c	-0.497	2.009	+5.6		1.879		2.331	+6
Spain		SPGB 1.45 27	98.734c	-0.300	1.586	+3.3		1.350		1.716	+16.3
Portugal		PGB4 1/4 04/27	110.804c	-0.426	2.812	+4.8		2.686		3.134	-13.3
Sweden		SGB0 1/2 05/28	99.637c	-0.661	0.786	+6.5		.368		.830	+42.7
Netherlands		NETHER0 3/4 27	102.224c	-0.615	0.517	+6.3		.428		.762	+5.9
Switzerland		SWISS 3 1/2 27	123.752	-0.441	0.168	+3.7		.225		.001	+4.9
Greece		GGB3 02/24/27	88.738c	+0.064	5.373	-0.9		5.153		5.724	-36.3
Asia/Pacific											
Japan		JGB 0.1 09/27	100.899c	-0.293	0.010	+2.3		-.019		.088	-3.8
Australia		ACGB 2 1/4 27	101.006c	-0.327	2.636	+3.6		2.351		2.745	+23.8
New Zealand		NZGB 4 1/2 27	114.402c	-0.084	2.778	+0.9		2.699		3.020	+2.5
South Korea		NDFB 2 1/2 27	99.554c	+0.002	2.239	+0.1		2.109		2.324	+3.9

Tickers Last Price Last Price Intra Day 1D 2D 3D 4D 5D P/E (1 Year) Div

• SXPX d 381.42 +0.55% +1.57% +2.06% +2.49% +2.81% +5.53% 21.19

• Last hour movers (5)

EBS AV d 36.545 +0.47% +3.23% +4.83% +3.91% +3.29% +11.76% +30.32% 15.45

GXI GY d 63.75 +0.47% +0.48% +0.77% +4.46% +7.56% +14.33% +1.72% 40.18

MDC LN d 748.5 +0.47% +0.33% +0.67% +0.99% +1.70% +6.90% +2.92% 24.11

NHY NO d 58.40 +0.52% +0.69% +2.46% +2.73% +14.96% +26.03% +41.40% 22.12

UNOI GY d 21.935 +0.62% +0.95% +1.04% +3.86% +14.81% +29.03% +67.25% 7.34

• Last hour ladders (5)

AZA IM d 1.477 +0.61% +0.40% +0.67% +3.87% +6.26% +10.87% +20.08% 36.63

CTEC LN d 267.60 +0.99% +1.55% +3.81% +2.18% +6.40% +14.91% +14.41% .00

GTO NA d 41.375 +0.62% +0.94% +4.25% +6.80% +9.22% +19.71% +24.66% .00

OCDO LN d 308.10 +0.58% +0.44% +0.84% +0.83% +5.23% +13.90% +16.66% 168.40

ORX NO d 78.45 +0.62% +0.95% +0.44% +1.94% +3.74% +7.05% +0.23% 19.80

• Remaining Securities (590)

ICOV GY d 65.70 +0.09% +1.33% +2.11% +2.70% +1.08% +2.18% +0.85% 9.97

AA/ LN d 168.40 +0.55% +3.44% +5.18% +4.53% +10.26% +24.52% +39.62% 13.86

AAL LN d 1399.5 +0.11% +0.04% +1.12% +2.00% +12.52% +28.14% +20.13% 6.25

AALB NA d 38.82 +0.04% +1.00% +1.64% +3.30% +5.60% +10.38% +25.96% 21.67

ABBN VX d 23.35 +0.04% +1.17% +2.64% +3.27% +6.23% +3.63% +8.71% 23.35

ABE SQ d 17.12 +0.15% +0.15% +0.94% +0.92% +2.21% +4.81% +28.77% 23.50

ABF LN d 3142.0 +0.10% +1.26% +3.77% +4.47% +0.41% +8.91% +14.48% 22.63

ABT BB d 101.70 +0.10% +0.30% +0.54% +1.88% +3.56% +8.74% +1.14% 61.79

ABN NA d 23.615 +0.08% +1.59% +1.68% +3.30% +4.93% +3.53% +12.19% 8.95

AC FP d 40.855 +0.02% +0.83% +1.96% +2.70% +4.60% +9.09% +15.31% 60.36

ACA FP d 15.25 +0.07% +1.50% +4.06% +4.60% +1.09% +8.01% +29.46% 15.58

ACKB BB d 143.45 +0.21% +0.31% +1.06% +1.09% +3.47% +3.37% +8.59% 17.41

ACS SD d 31.775 +0.25% +0.90% +0.39% +0.61% +2.50% +10.98% +5.85% 27.93

AD NA d 14.965 +0.17% +0.03% +0.63% +0.63% +0.63% +10.92% +22.66% +25.29% 17.40

ADEN VX d 72.15 +0.07% +1.05% +2.49% +3.44% +4.49% +0.35% +9.61% 14.13

ADH LN d 1831.0 +0.44% +0.41% +0.11% +3.12% +18.87% +10.41% +3.01% 22.83

First Word

MarketsLive N.A. Equities Morning Insights

Markets Live News, Nature... Global Macro News

09/08 Catastrophe Bonds Brace For Disaster

This is shaping up to be the **worst month ever** for catastrophe bond investors, just as the market was taking off.

Catastrophe bonds are an alternative to reinsurance and are increasingly popular for their diversification. They pay generous coupons, so you get high-yield returns and U.S. Treasury levels of volatility. But if they get triggered by a predefined disaster, you lose your principal. The year through June saw record issuance, according to a report from Aon Securities, half of it in 2Q.

Last night's Mexican earthquake, the biggest to hit the country in a century, may wipe out investors in a cat bond sold just last month by the World Bank (fastest default ever?). At the same time, Hurricane Irma threatens a further \$12 billion of bonds that protect against wind in Florida, according to Trading Risk. That's almost half the market.

Hedge fund Nabila Capital, which invests in the bonds, has been urging investors to stay calm. The criteria can be very specific (I once wrote about a Mexican bond that depended on whether the minimum central pressure of the storm at landfall had been above or below 920 millibars). Most bonds are structured to protect against once-in-a-lifetime risks, and it may be months before investors know if their bonds will default or not. According to Aon, only one North American bond was triggered in the 12 months through June.

My colleague Oliver Sues has more on the costs of Irma and its impact on Cat bonds here. He made this chart, which shows 5% dips in the Swiss Re Cat Bond price index after previous disasters.

Bonds Can Lose
Major events have cost investors in the past

Historical Cat Bond Price Index

Most of the Florida bonds have triggers relating to the insured losses of companies, so we

INAP In: All Securities

Global 37969 Securities

Global Market Intraday Return by Region

Latin America & Caribbean (x) 4.90%

North America (x) 0.37%

Asia Pacific (Emerging) (x) 0.25%

Global by region (x) 0.73%

Western Europe (x) 0.28%

Group by Region Sector

INDU > GICS

30 Securities

INDU Percent Price Change by GICS Sector

Consumer Staples (d) 0.00%

Health Care (d) -0.31%

Industrials (d) 0.10%

INDU by GICS (d) 0.30%

Consumer Discretionary (d) -0.31%

Information Technology (d) 0.33%

Group by Region Sector

My Security Wor: 1 SPX Index

• SPX d 2495.23 13:26 +0.29%

• Top Performers (10)

CHK UN d 13.625 13:26 +5.37%

CMA UN d 16.855 13:26 +4.34%

CTL UN d 19.25 13:25 +4.96%

GPS UN d 27.91 13:26 +7.59%

GT UN d 32.75 13:25 +3.80%

LB UN d 40.00 13:26 +5.54%

NFX UN d 126.13 13:26 +3.98%

PRGO UN 189.23 13:26 +4.89%

RRC UN d 118.19 13:26 +7.19%

SIG UN d 68.83 13:25 +3.91%

• Bottom Performers (10)

ANTH UN 1189.41 13:25 -3.34%

AVB UN d 1184.72 13:23 -2.03%

COO UN d 247.89 13:25 -2.17%

DRE UN d 129.485 13:25 -2.17%

ES UN d 162.81 13:25 -2.03%

EXR UN d 177.76 13:26 -2.47%

MCD UN d 156.56 13:26 -3.08%

PSA UN 207.77 13:23 -2.64%

TSS UN d 168.19 13:25 -2.24%

WEC UN d 165.67 13:18 -2.04%

• Remaining Securities (485)

A UN d 166.02 13:25 -0.14%

AAL UN d 46.085 13:26 +0.49%

AAP UN d 197.88 13:25 +3.69%

AAPL UN 161.98 13:26 +0.30%

ABBN UN 86.97 13:26 -0.03%

ABC UN d 184.77 13:25 +0.45%

ABT UN d 751.90 13:26 -1.05%

ACN UN d 136.59 13:24 +0.26%

ADBE UN 155.01 13:25 +1.19%

ADL UN d 181.98 13:25 -0.29%

ADN UN d 43.22 13:25 +1.00%

ADP UN d 107.97 13:26 +0.44%

ADS UN d 221.02 13:19 +0.83%

GD Graphic Dashboard

Erste Group Bank AG (Vienna)

Price 2D 1D 30D 90D 1Y 5Y

\$36.55 +3.23% +1.98% vs Peer Avg

Bid/Ask 30m 0% / 98%

A 200 AWAY 1D +51.7%

News Chart 5D

News Events

Next Earnings 52 Days

Analyst Rtr

Trade Adverts 1.4M

Peer Avg +0.59%

Finance Rate 6M 0.15/0.40

Default Risk 1Y

Debt 30Y

3M Imp Vol 3M

Best EPS 3M

Consensus Rtr

3.77x

PT 12H 36.38

65.48 bp

12.2x

12.2x

Premium 2Y

Venus Volume

Insider Pct 1Y

IGB 0.1064

IGB CDS 45 bp

47.79B

25.76

2.86

FY 2017

Buyer 12

Seller 7

1.97M

0.06%

692.75k

315.18k

235.42k

202.80k

526.29k

ON News - Erste Group Bank AG

Stareia pieteil 11 - 15 septembrie 2017

Czech PX Rises 1.2% to 1,035.89; CEZ Leads Advance

Erste Upgraded to Buy at Kepler Cheuvreux; PT Raised to 45 Euros

Erste Raised to Buy at Kepler Cheuvreux, PT EU45

Fitch: Austrian Banks' Earnings to Stay Strong Throughout 2017

Stockpicking for European Banks Will Shift Up a Gear From 2018

Stareia pieteil 4 - 8 septembrie 2017

Austrian Banks Show Better Resilience in Stress Test

Austrian Banks Show Better Resilience in C.BANK STRESS TE...

Banca Transilvania Rises Most in 2 Months After Bank-Tax Denial

Austrian Banks to Repay Interest After Overcharging: APA

Czech PX Falls 1.1% to 1,024.81; Erste Leads Decline

Austrian ATX Falls 1.8% to 3,146.59; Erste Leads Decline

Stareia pieteil 28 august - 1 septembrie 2017

Erste Group: Martin Radjaby-Rasset takes over as Head of Strate...

Erste Group: 22.08.2017 - Publication of a transaction regarding...

Stareia pieteil 21 - 25 august 2017

Erste Group: 18.08.2017 - Announcement pursuant to sec. 93 Aus...

Erste Drops BMW, Daimler From 'Sustainable' Investment List

Moody's corrects rating and rating history for ISINs AT0000A14P...

HSBC Tops Natixis, UniCredit to Gold in 2Q Price-Target Upgrades

G 32B: Custom Seasonality

Normalized As Of 02/02/2016

2 YRS AGO 0.913


1 YRS AGO 0.913

3 YRS AGO -15.424

4 YRS AGO 30.40

2016

2017

 **REVOLUTION**

Slight of Hand?



Breaking Down Barriers



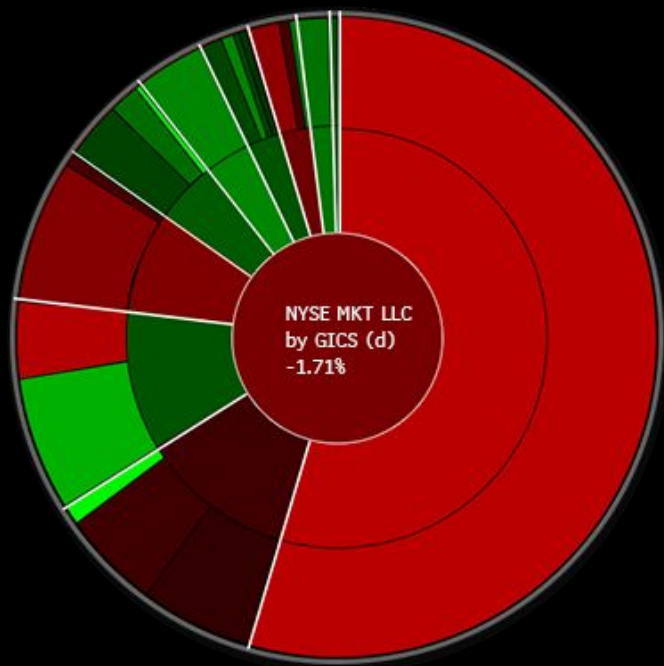
Equity Indices	Forex (USD)	Sovereign Bonds	CDS (5Y)	Commodities
Chile IPSA 1.66 % 3962.90 +64.78	Philippines Peso NDF .81 % 46.56 +.38	Thailand 30Y 14.2 bp 2.690 -5.01%	Brasil CDS 18.46 bp 366.69 -4.79%	Cattle Feed 7.46 % 151.50 c -18.78
Turkey BIST 100 1.92 % 82943.44 c +1566.30	Turkey Lira .88 % 2.8668 +.0254	Colombia 5Y 21.1 bp 7.423 -2.76%	Philippines CDS 3.86 bp 94.74 -3.91%	Cattle Feed 2.34 % 160.70 d -3.85
Czech PX 1.84 % 914.85 c +16.53	Chile Peso NDF .87 % 678.10 +5.88	Israel 5Y 5.0 % .660 -7.04%	Indonesia CDS 6.65 bp 183.43 -3.50%	Cattle CME 1.22 % 129.10 d -1.60
New Zealand NZX50 .76 % 6623.50 c +50.05	Sweden Krona .63 % 8.2311 +.0520	Japan 30Y 15.4 % .436 -26.10%	Chile CDS 3.34 bp 87.41 +.17%	Ethanol 1.30 % 1.45 d -.02
Greece ASE 3.29 % 548.58 c -18.66	China Renminbi NDF .21 % 6.5213 +.0180	Chile 5Y 4.0 % 4.170 -.94%	Malaysia CDS 5.68 bp 143.25 -3.81%	Coffee ICE 1.58 % 1482.00 c +23.00
Malaysia FTSE 1.43 % 1692.51 c +13.15	Singapore Dollar .23 % 1.3475 +.0067	Norway 5Y 5.3 % .645 -7.57%	Austria CDS 2.83 bp 27.01 +3.57%	Rubber SHF 1.77 % 11390.00 d -205.00



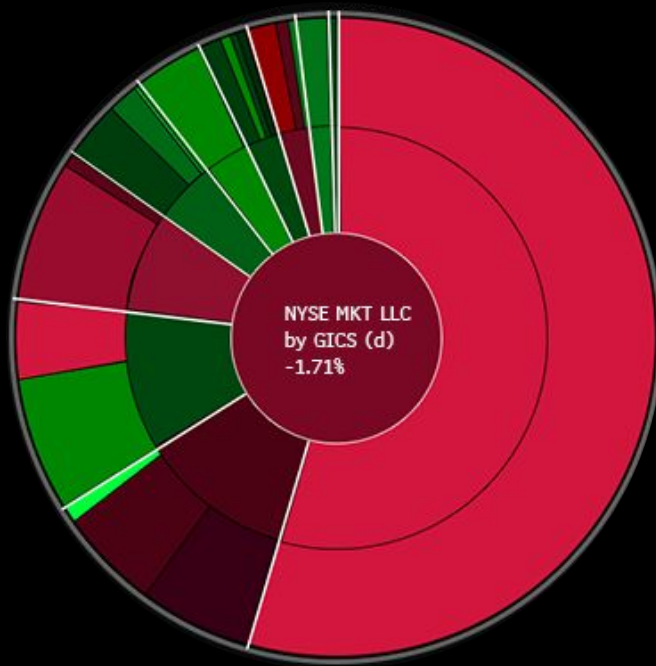
Equity Indices	Forex (USD)	Sovereign Bonds	CDS (5Y)	Commodities
Chile IPSA 1.66 % 3962.90 +64.78	Philippines Peso NDF .81 % 46.56 +.38	Thailand 30Y 14.2 bp 2.690 -5.01%	Brasil CDS 18.46 bp 366.69 -4.79%	Cattle Feed 7.46 % 151.50 c -18.78
Turkey BIST 100 1.92 % 82943.44 c +1566.30	Turkey Lira .88 % 2.8668 +.0254	Colombia 5Y 21.1 bp 7.423 -2.76%	Philippines CDS 3.86 bp 94.74 -3.91%	Cattle Feed 2.34 % 160.70 d -3.85
Czech PX 1.84 % 914.85 c +16.53	Chile Peso NDF .87 % 678.10 +5.88	Israel 5Y 5.0 % .660 -7.04%	Indonesia CDS 6.65 bp 183.43 -3.50%	Cattle CME 1.22 % 129.10 d -1.60
New Zealand NZX50 .76 % 6623.50 c +50.05	Sweden Krona .63 % 8.2311 +.0520	Japan 30Y 15.4 % .436 -26.10%	Chile CDS 3.34 bp 87.41 +.17%	Ethanol 1.30 % 1.45 d -.02
Greece ASE 3.29 % 548.58 c -18.66	China Renminbi NDF .21 % 6.5213 +.0180	Chile 5Y 4.0 % 4.170 -.94%	Malaysia CDS 5.68 bp 143.25 -3.81%	Coffee ICE 1.58 % 1482.00 c +23.00
Malaysia FTSE 1.43 % 1692.51 c +13.15	Singapore Dollar .23 % 1.3475 +.0067	Norway 5Y 5.3 % .645 -7.57%	Austria CDS 2.83 bp 27.01 +3.57%	Rubber SHF 1.77 % 11390.00 d -205.00

No color vision deficiency

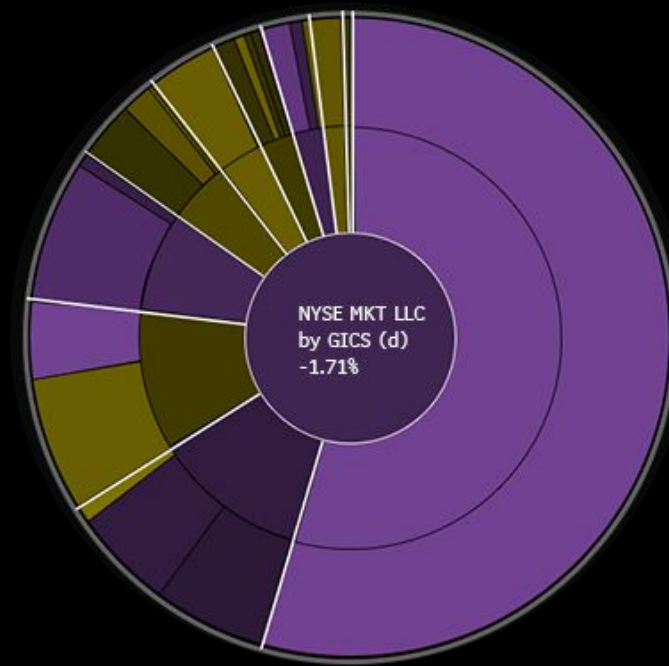
Original Bloomberg
Palette



Current

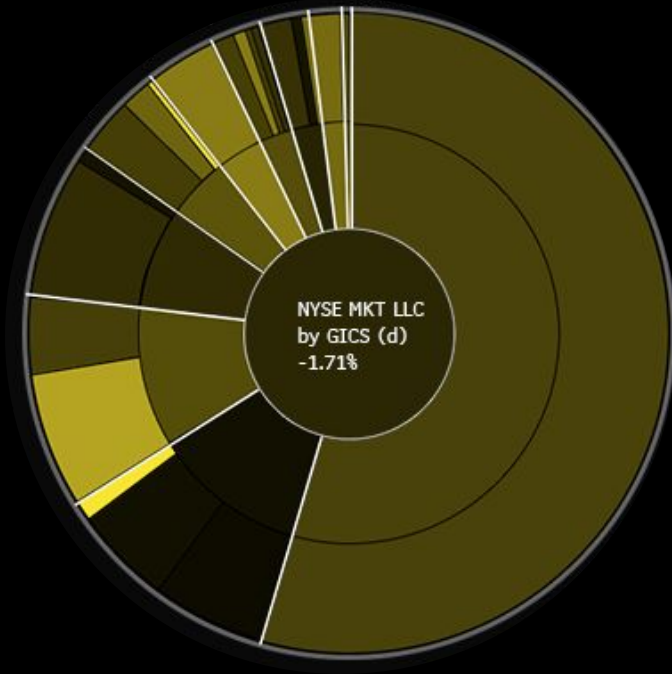


Alternate?

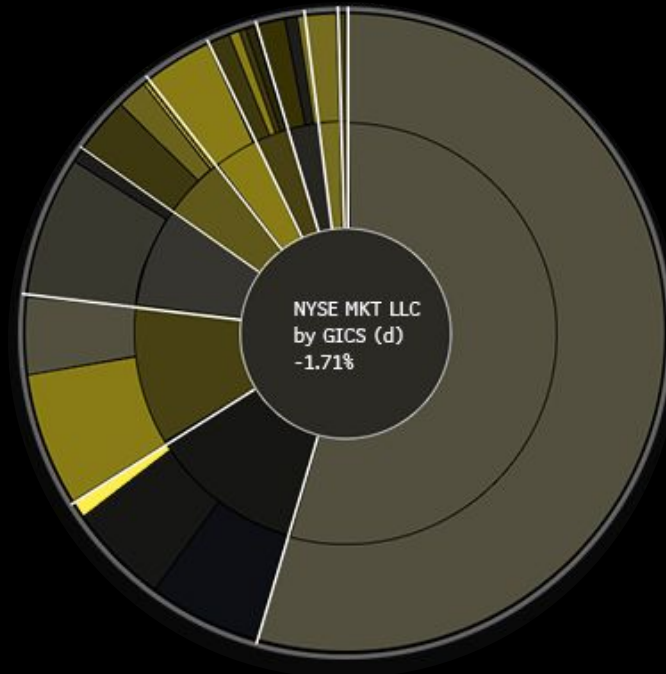


Deuteranopia

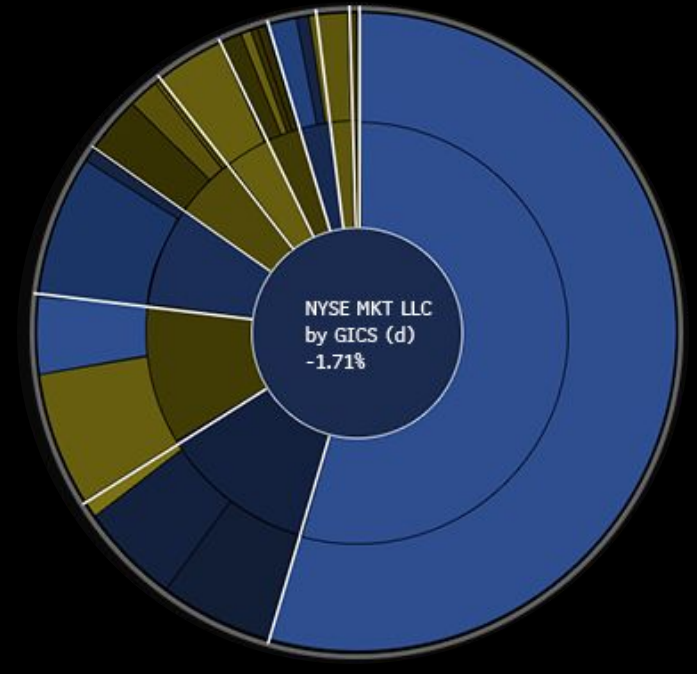
Original Bloomberg
Palette



Current



Alternate?



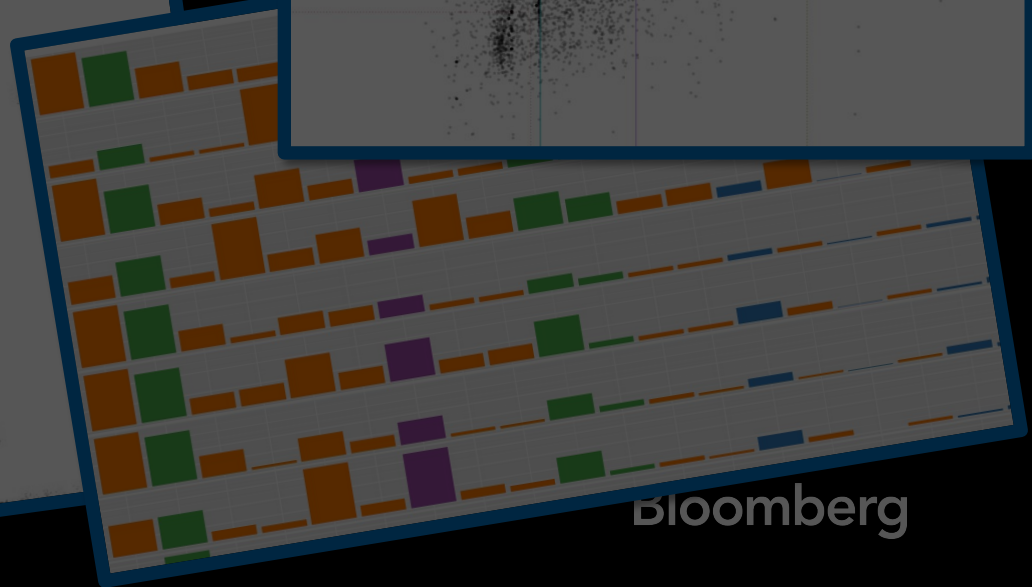
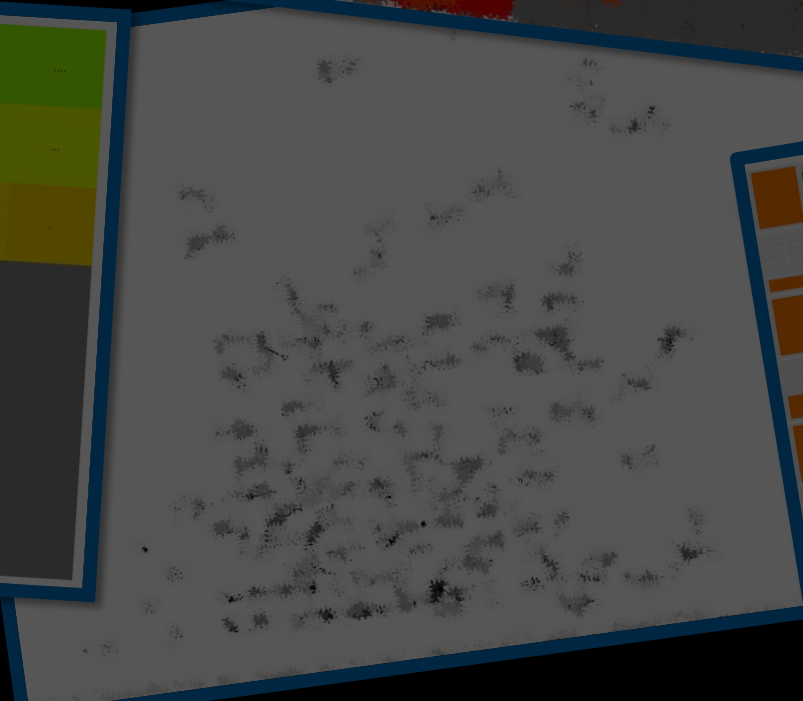
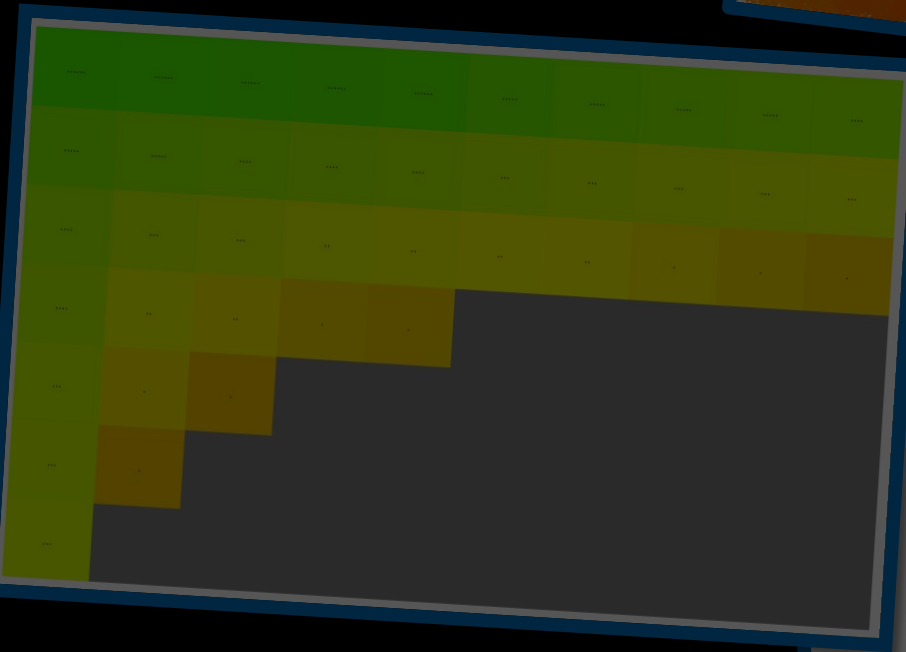
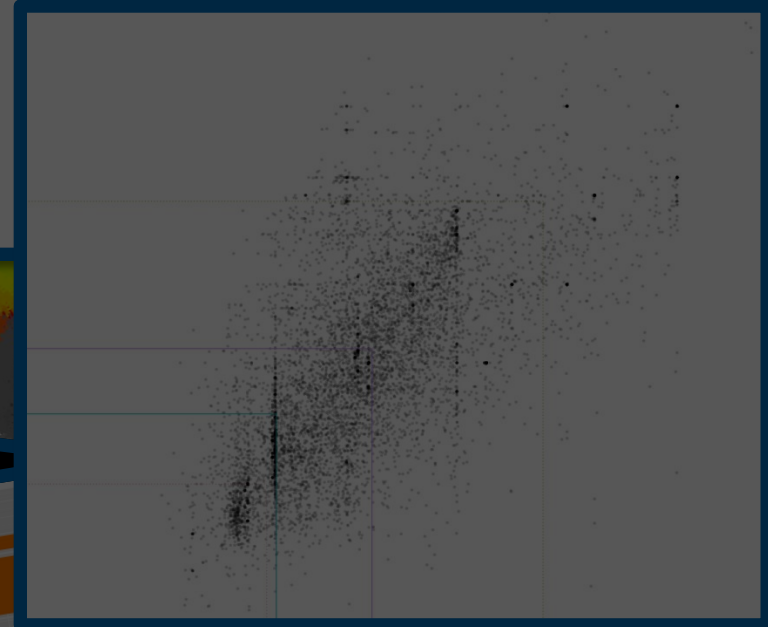
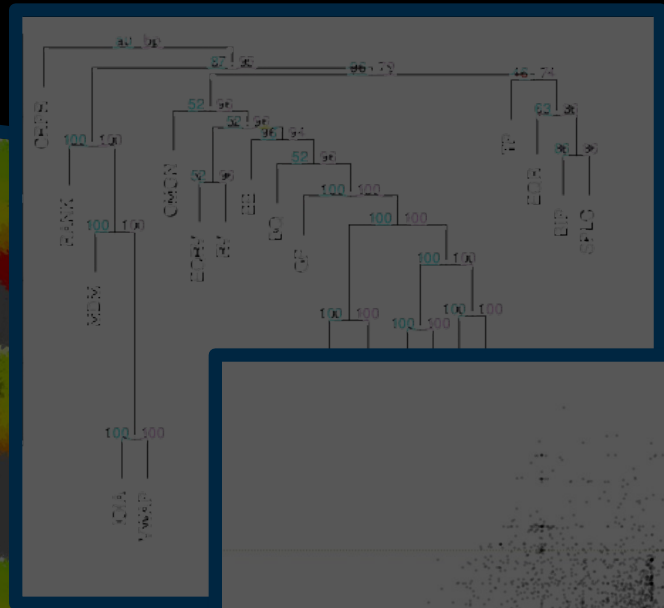
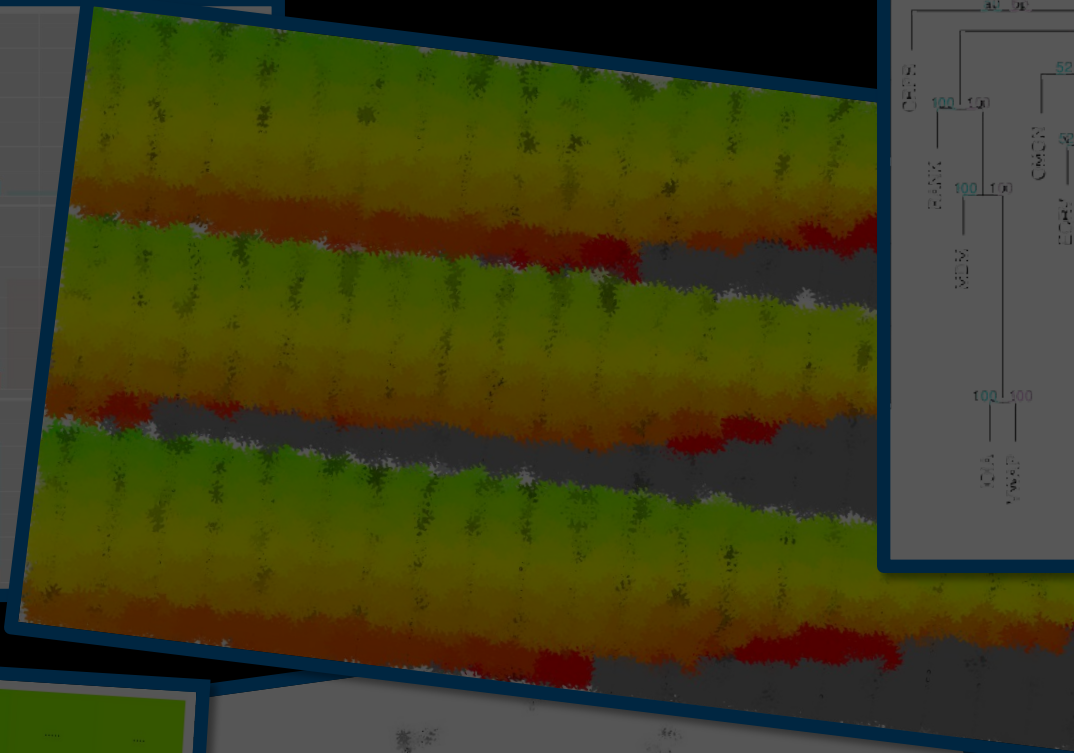
Deuteranopia (reduced sensitivity to green light) most common form of CVD (approx 5% of males).

Determining User Needs

Know Thy User

The User is Not Like Me

Data Analysis



Card Sorting Exercise

Contextual Inquiry

Let's Make a Sandwich...

Bloomberg

Thank you!

Questions?