

Hyperion Focus 16

AI and the Power of Language

Matt Gould

Arria NLG

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AI & The Power of Language

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NATURAL LANGUAGE GENERATION **ARRIA**

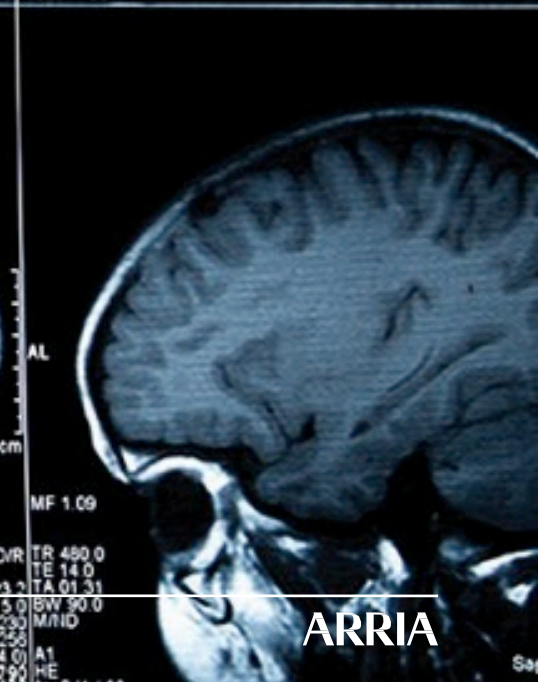
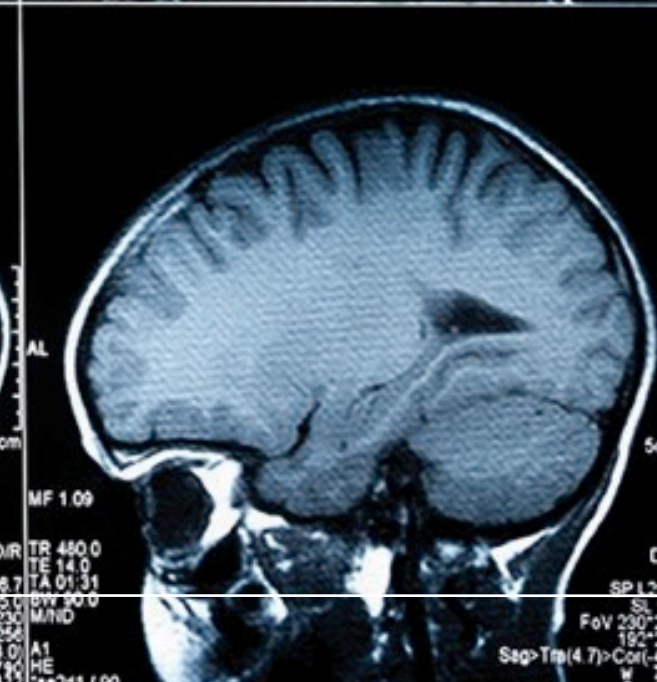
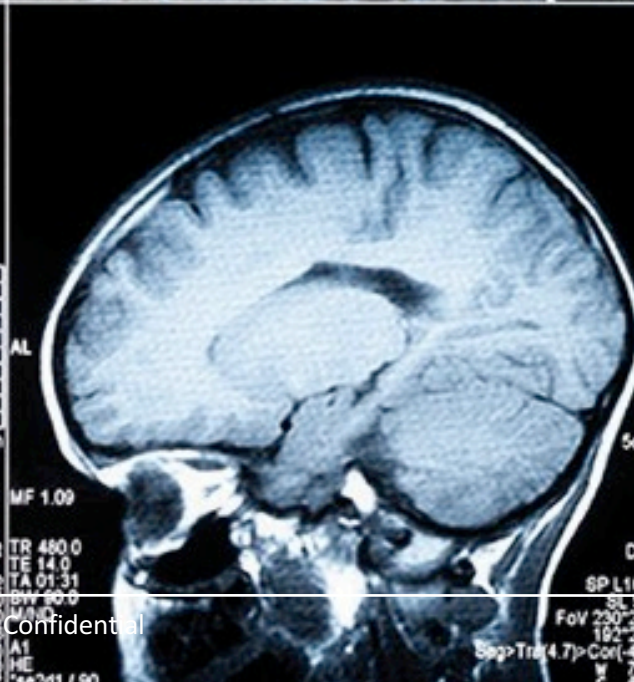
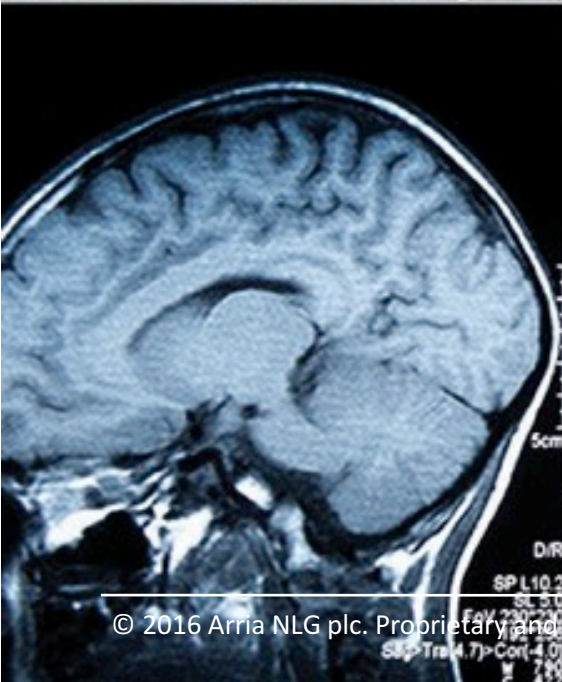
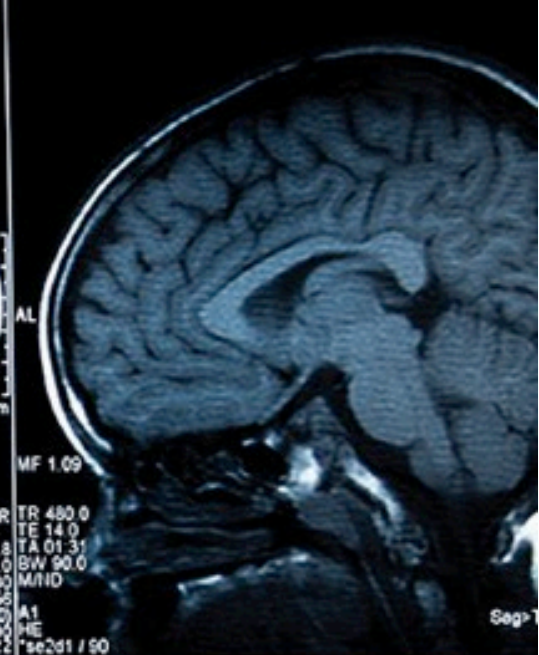
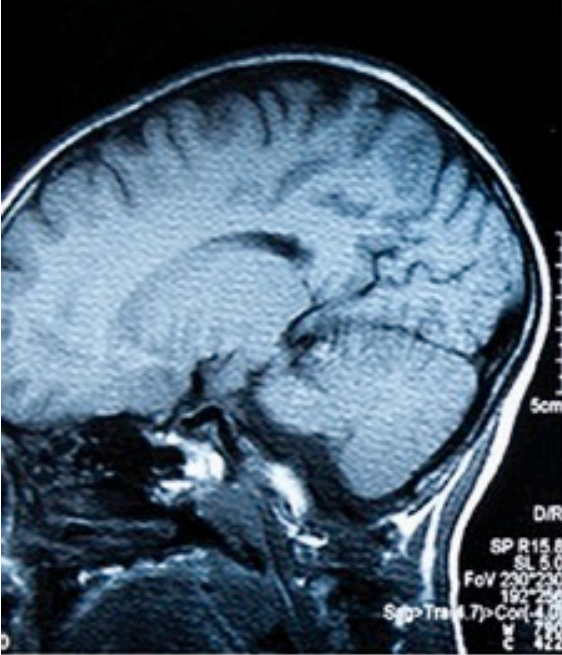
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Dashboards must be communicated via language



BEFORE NLG

UK Met Office

60 human-authored
weather reports

24 hours

BEFORE NLG

UK Met Office

60 human-authored
weather reports

24 hours

AFTER NLG

ARRIA PLATFORM

5,000 site-specific
weather reports

72 seconds

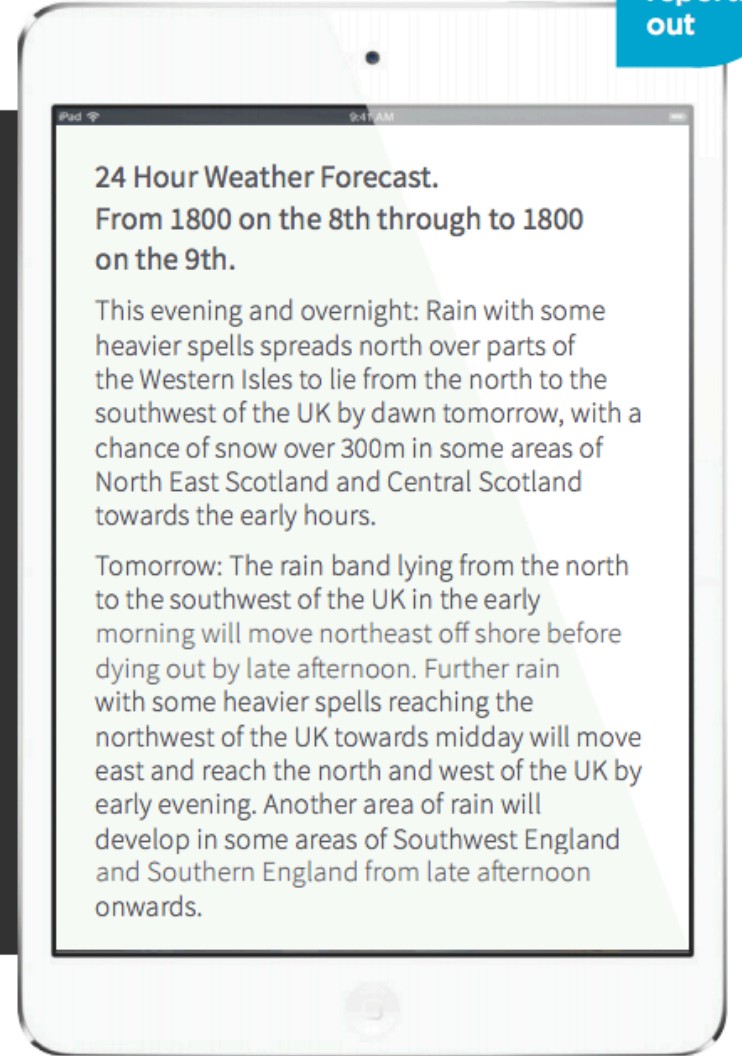
Reports at scale and speed

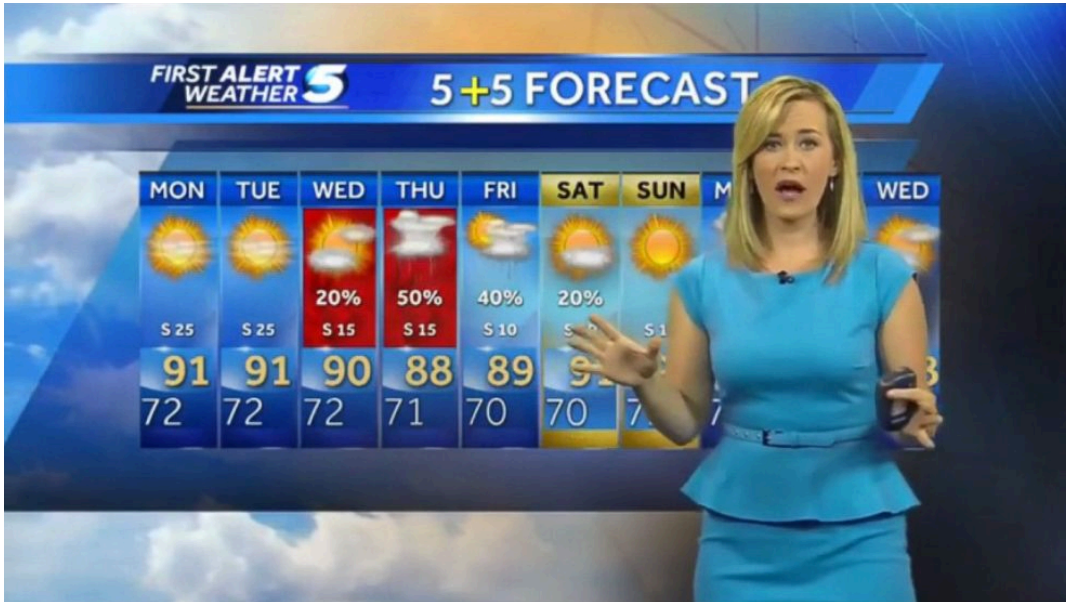
- Virtually indistinguishable from top meteorologists
- Updated on demand
- Scalability can produce site-specific and interest-specific weather reports for locations all around the planet
- Increased levels of accuracy
- Our client could not contemplate doing this with human authors

Source data in

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```

Written reports out





The weather for your walk to work this morning is going to be wet, with light rain likely for most of your usual commute.

The mountain bike you are planning this afternoon will have the wind behind you for the ride out to the forest, but a headwind on the way home. Make sure you take your bike light and high visibility clothing as sunset occurs while you are still out according to your calendar.

The best route for fuel efficiency takes the M11 to Cambridge, before turning West to link with the M1 before Peterborough. This way you will avoid the worst of the prevailing Northerlies and ice...

The Arria NLG Solution – The Expert Inside

BEFORE

Prior to Arria’s NLG technology, the UK Met Office would produce 60 human-authored weather reports a day

AFTER

The Arria NLG Engine, with no human intervention, can write **5,000** site-specific weather reports in less than a minute

00001, A' BHUIDHEANACH BHEAG,, SCOTLAND, EUROPE,,1200,Fri,07,01,2011,0,NNW,15,13,1,VG,1021,40,27,10,1,3,N,11,9,0,VG,10, 2,55, 18,6,1,6, WNW,9,6,0,VG,1022,61,13,3,1,9,WNW,9,3,0, VG,1021,69,13, 0, 1,12, NW,9, 1, 0, 0, VG, 1021, 77,12,-3,1,15,NNW,7,-1,1,VG,1021,88,9,- 5,1,18,NNW,8,5,1,VG, 1022,59, 3,2, 1,21,NNW,7,10,1,VG,1020,43,16,9,1,24,N,8,12,1,VG,1019, 40,14,10,1,27,WNW, 6,6,0,VG, 1020,65,10,4,1,30,WNW,5,2,0,VG,1020,84,6,0,1,33,NNW,4,0,0,VG,1020,90,5,-2,1,36,N- NW,4,-1,0,GO,1019,92,5,-4,1,39,NNW,4,-2,1,GO,1020,93,6,-5,1,42,N,4,5,1,VG,1022,60,7,4 ,1,45,E,3,VG,1020,48,10,9,1,48,WNW,1,11,3,VG,1019,44,6,11,1,51,WNW,4,8,2,VG,1020,6 9,6,7,1,54,WNW, 4,7,7,VG,1020,84,5,6,1,57,NNW,4,6,9,VG,1019,90,5,5,1,60, N,3,6,9,GO, 1017,91,5,5,1,63,N,3,6,10,GO,1017,92,4,5,1,66,E,3,9,3,VG,1017,76,8, 8,1,69,ESE,12,13, 3,VG,1014,46,23,10,1,72,SE,12,14,3,VG,1011,37,22,11,1,75,E,10,11,9,VG,1011,49,16,9,1, 78,E,6,10,9,VG,1011,75,9,8,1,81,E,6,9,9,VG,1011,78,8,8,1,84,E,3,8,9,VG,1011,90,3,7,1,87, ENE,1,7,3,GO,1013,96, 1013,96,2,7,1,90,WNW,4,11,3,VG,1016,71,13,11,1,93,NW,14,10,3

Weather Forecast

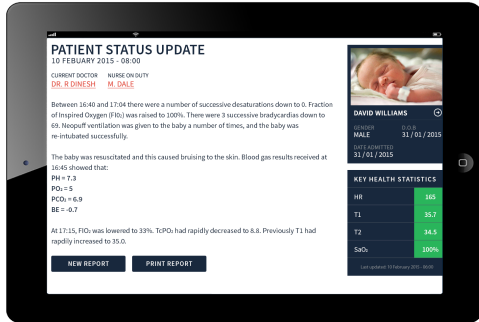
For 24 hrs. From 1800 on the 8th through to 1800 on the 9th.

This evening and overnight: Rain with some heavier spells spreads north over parts of Western Isles to lay from the north to the southwest of the UK by dawn tomorrow, with a chance of snow over 300m in some areas of Northeast Scotland and Central Scotland towards the early hours.

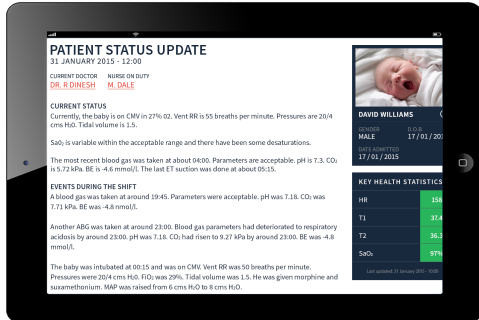
Tomorrow: The rain band lying from the north to the southwest of the UK in the early morning will move north east off shore before dying out by late afternoon. Further rain with some heavier spells reaching the northwest of the UK towards midday will move east and reach the north and west of the UK by early evening. Another area of rain will develop in some areas of Southwest England and Southern England from late afternoon onwards.

Tailorability

Same data input. Different audience reports.



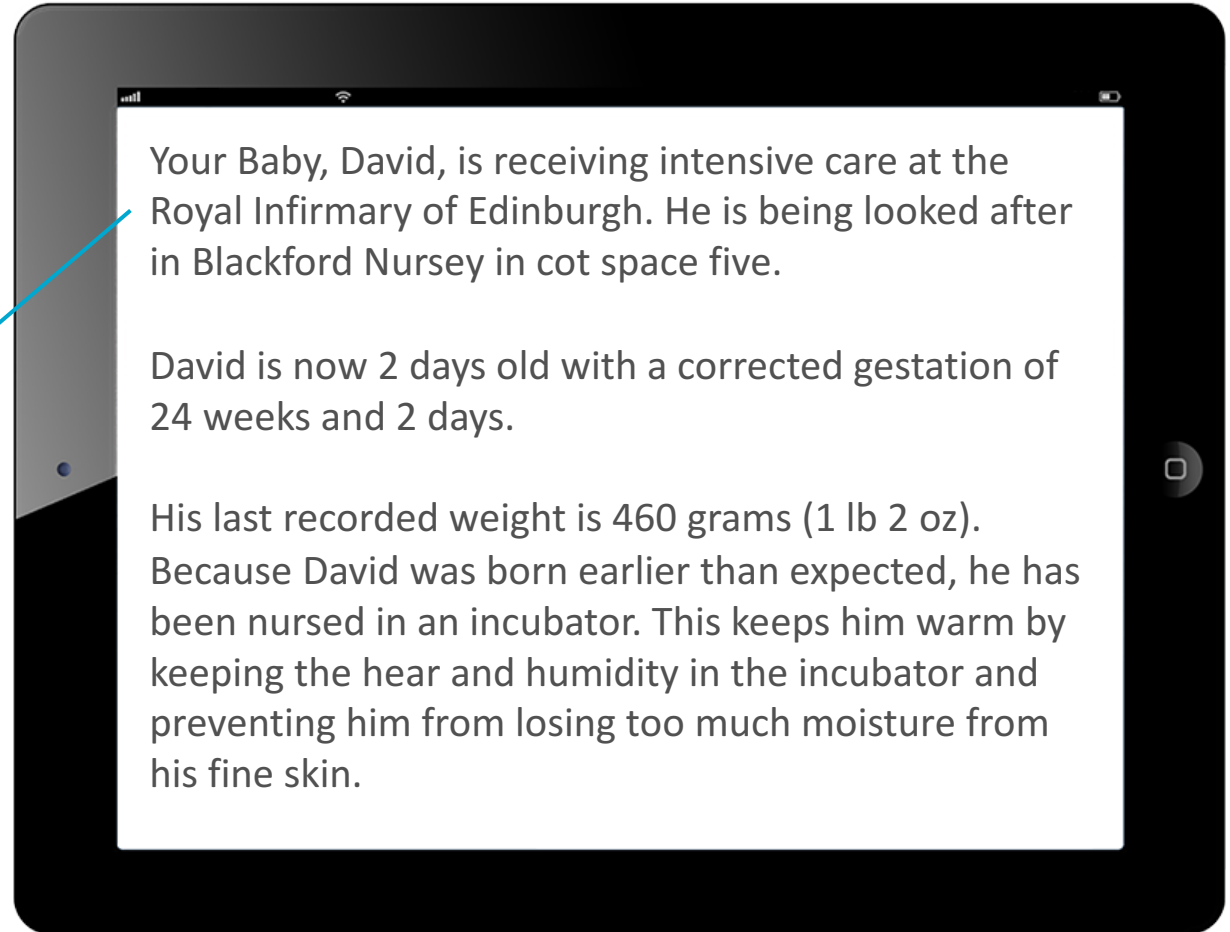
DOCTOR



NURSE



FAMILY

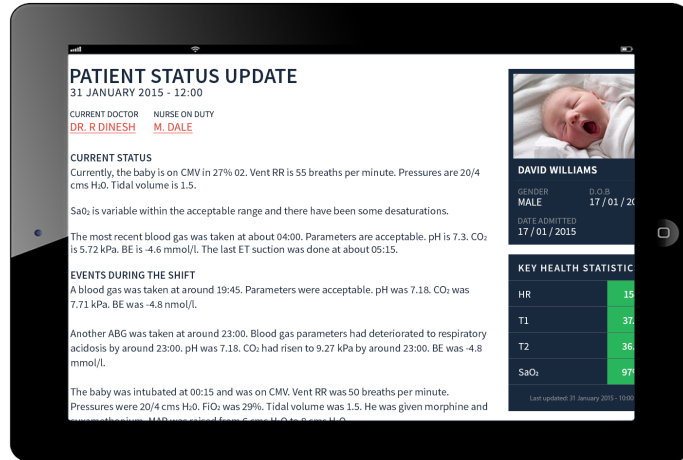


Tailorability

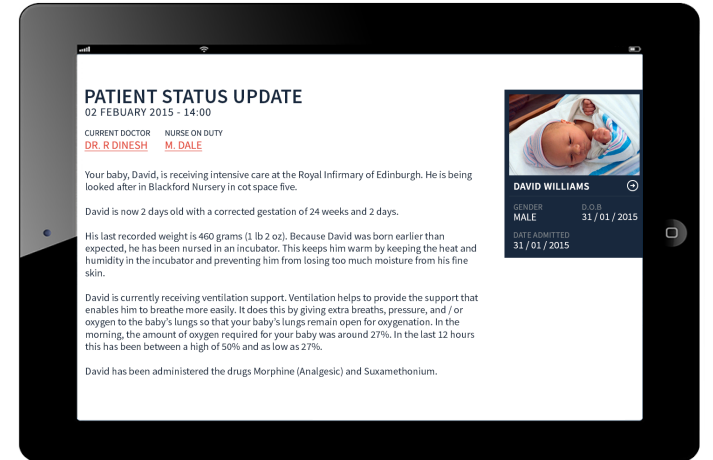
Same data input. Different audience reports.



DOCTOR



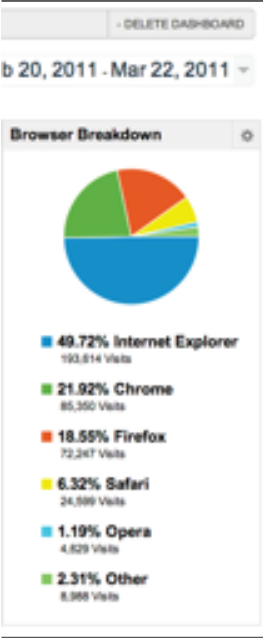
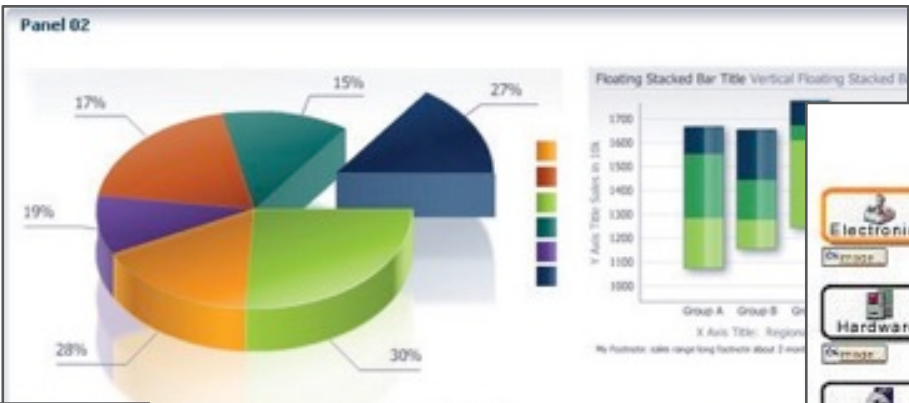
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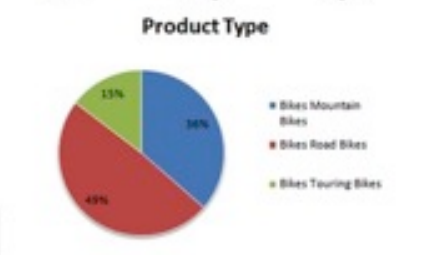
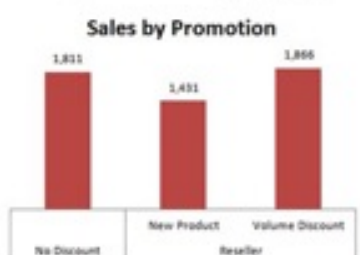
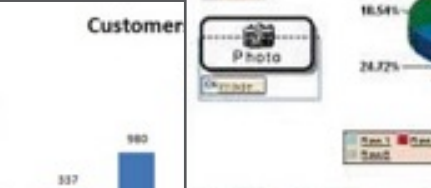
PARENTS

Your company puts **data** at the heart of your business

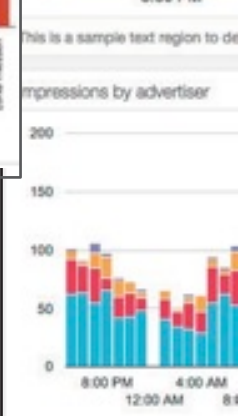
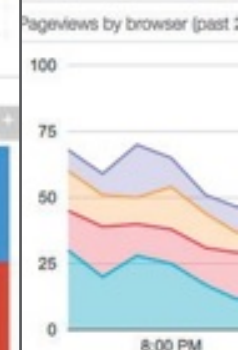
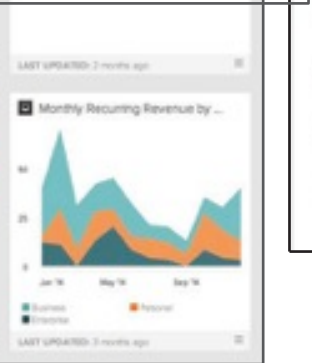
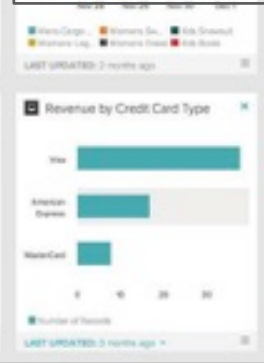
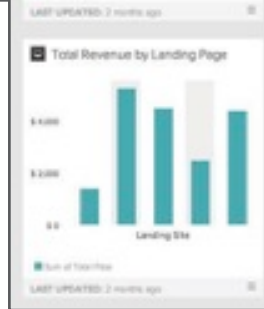
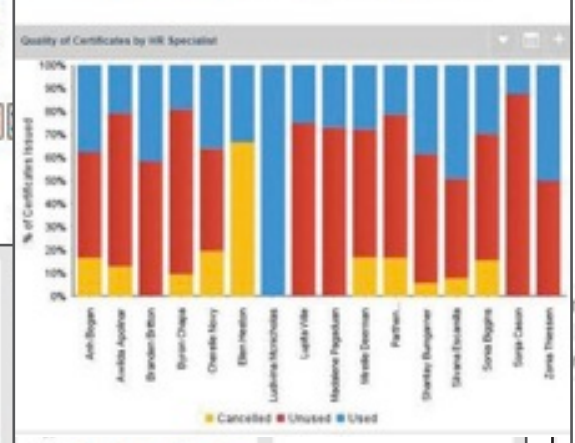
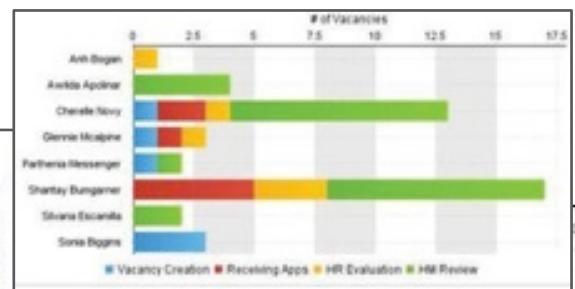




| ID | Value | Date | Status |
|--------|-------------|------------|--------|
| 1234 | 70,000 USD | 01-02-2005 | ✖ |
| 23890 | 579,000 USD | 13-04-2003 | ⚠ |
| 5982 | 21,000 USD | 05-08-2000 | ✔ |
| 89323 | 583,000 USD | 11-30-2001 | ⚠ |
| 2087 | | | |
| 298492 | | | |
| 355510 | | | |
| 2910 | | | |
| 2087 | | | |

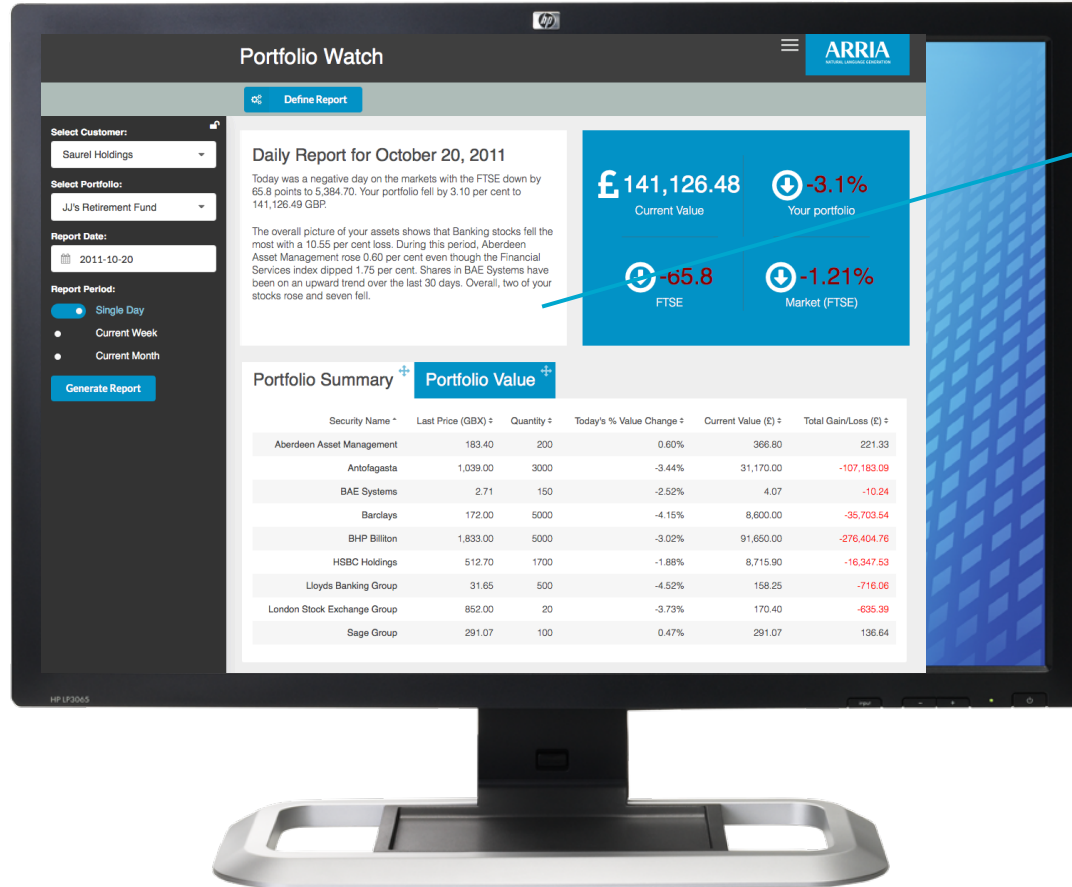


- Electronics
- Hardware
- Software
- Peripherals
- Photo



DEMO

Wealth management reporting



Daily Report for October 20, 2011

Today was a negative day on the markets with the FTSE down by 65.8 points to 5,384.70. Your portfolio fell by 3.10 per cent to 141,126.49 GBP.

The overall picture of your assets shows that Banking stocks fell the most with a 10.55 per cent loss. During this period, Aberdeen Asset Management rose 0.60 per cent even though the Financial Services index dipped 1.75 per cent. Shares in BAE Systems have been on an upward trend over the last 30 days. Overall, two of your stocks rose and seven fell.

Financial Statements

SELECTION PANEL

Select Subsidiary:

Year:

Reporting Period (quarter):

Financial Statement Analysis

| Subsidiary | 130 | Currency | EUR | Hard Threshold | 2MM |
|------------------|------|-------------------|------|----------------------|-----|
| Reporting Year | 2015 | Comparison Year | 2014 | Percentage Threshold | 10% |
| Reporting Period | Q1 | Comparison Period | Q1 | Minimum Threshold | 50M |

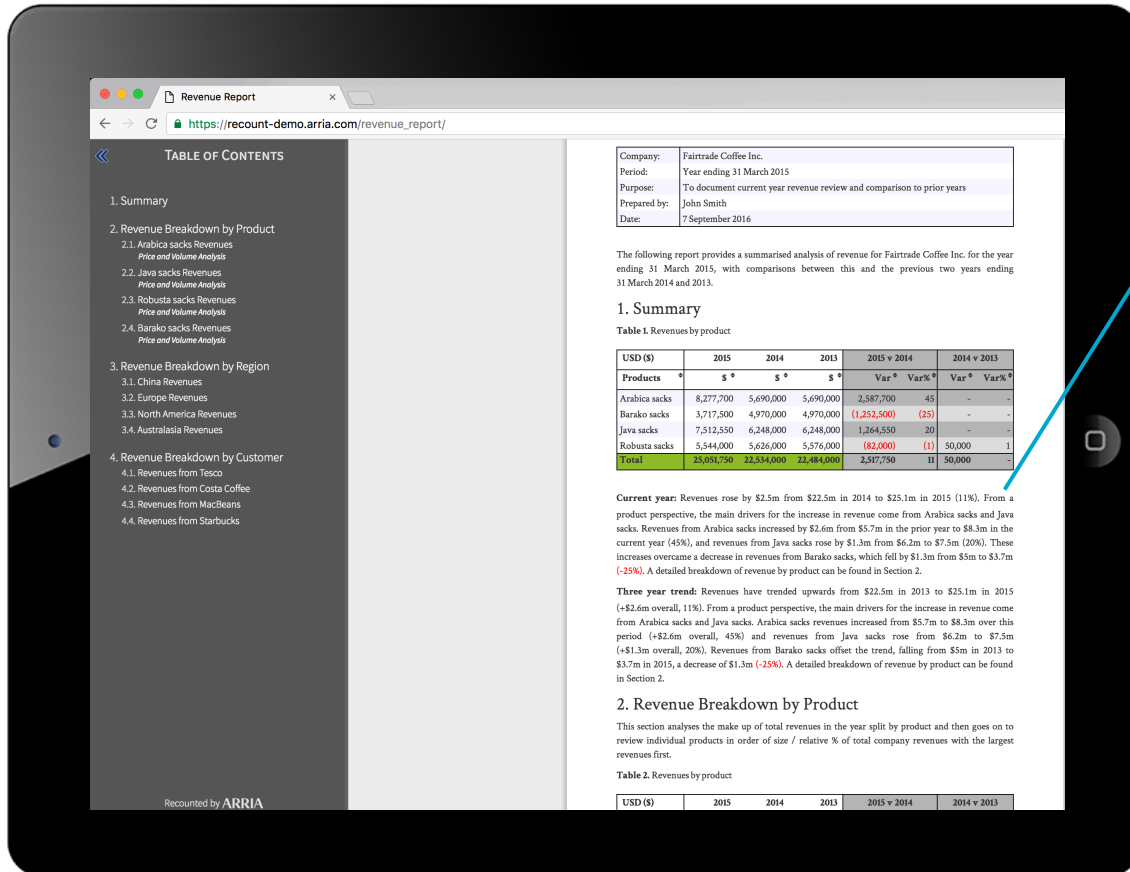
US GAAP Profit & Loss Swing Analysis

| Account Description | Reporting Period | Comparison Period | Period Movement | Note |
|------------------------------------------------|--------------------|-------------------|--------------------|------|
| Third Party Fee Relevant | -235,535,272 | -230,226,838 | -5,308,434 | PL 1 |
| Third Party Fee Relevant (Reversal)/Contra | 235,535,272 | 230,828,858 | -5,108,453 | |
| Third Party Non Fee Relevant | 31,309,842 | 17,480,861 | 13,828,981 | PL 2 |
| Third Party Non Fee Relevant (Reversal)/Contra | -31,309,842 | -17,480,861 | -13,828,981 | |
| Third Party Sales | 0 | 0 | 0 | |
| Commission Fees | -4,716,956 | -4,616,537 | -100,419 | |
| Commission Expenses | -4,716,956 | -4,616,537 | -100,419 | |
| Delivery Cost | 46,800 | 91,351 | -44,551 | |
| Delivery Cost (Reversal)/Contra | -46,800 | -91,351 | 44,551 | |
| Total Delivery Cost | 0 | 0 | 0 | |
| Bad/Doubtful Debt Expense | 414,572 | -184,363 | 598,935 | |
| Bad/Doubtful Debt Expense (Reversal)/Contra | -414,572 | 184,363 | -598,935 | |
| Total Bad Debt | 0 | 0 | 0 | |
| Other SG&A | 54,828 | 101,700 | -46,872 | |
| SG&A Billing-in | 6,250,529 | 6,809,165 | -558,636 | |
| Natural SG&A | 18,682,252 | 22,211,172 | -3,528,920 | PL 3 |
| Intermediary Budget & A/B billings | -24,555,592 | -28,579,128 | 4,023,536 | PL 4 |
| Bonus Program | 217,889 | 145,222 | 72,667 | PL 5 |
| SG&A | 62,196 | 638,132 | -575,936 | |
| Marketing | 14,330,460 | 16,507,133 | -2,176,673 | PL 6 |
| Marketing (Reversal)/Contra | -14,330,460 | -16,507,133 | 2,176,673 | |
| Marketing Expenses | 0 | 0 | 0 | |
| Other Income Expense | -475,388 | 1,058,729 | -1,534,067 | PL 7 |
| Foreign Exchange Gain/ Loss | -15,172 | -48,271 | 32,099 | |
| Intercompany Other Income Expense | -371,145 | -441,210 | 70,065 | PL 8 |
| Intercompany Interest Income & Expense | 3 | 129 | -126 | |
| Interest Income & Expense | 135 | 103 | 32 | |
| Other Income & Expenses | -861,517 | 601,481 | -1,462,998 | |
| Profit Before Tax | -4,926,567 | -3,326,924 | -1,599,643 | |
| Current Income Tax Expense Non US | -2,369,558 | 735,056 | -3,104,614 | |
| Deferred Tax Expense Non US | -11,557,108 | -187,764 | -11,369,344 | |
| Tax | -13,926,666 | 547,292 | -14,473,958 | |
| Total | -19,853,233 | -2,179,632 | -16,673,601 | |

High Level Summary
 Total results for the current period are -18.9MM CHF; this represents an increase of 16.1MM from the prior period. This is a result of a decrease in Tax (14.5MM) and Other Income & Expenses (1.5MM).

Total results for the current period are- 18.9MM CHF; this represents an increase of 16.1MM from the prior period. This is a result of a decrease in Tax (14.5MM) and Other Income & Expenses (1.5MM).

Management Reporting



“Current year: Revenues rose by \$2.5m from \$22.5m in 2014 to \$25.1m in 2015 (11%). From a product perspective, the main drivers for the increase in revenue come from Arabica sacks and Java sacks. Revenues from Arabica sacks increased by \$2.6m from \$5.7m in the prior year to \$8.3m in the current year (45%), and revenues from Java sacks rose by \$1.3m from \$6.2m to \$7.5m (20%). These increases overcame a decrease in revenues from Barako sacks, which fell by \$1.3m from \$5m to \$3.7m-25%. A detailed breakdown of revenue by product can be found in Section 2.”

| | |
|--------------|-----------------------------------------------------------------------|
| Company: | Fairtrade Coffee Inc. |
| Period: | Year ending 31 March 2015 |
| Purpose: | To document current year revenue review and comparison to prior years |
| Prepared by: | John Smith |
| Date: | 7 September 2016 |

The following report provides a summarised analysis of revenue for Fairtrade Coffee Inc. for the year ending 31 March 2015, with comparisons between this and the previous two years ending 31 March 2014 and 2013.

1. Summary

Table 1. Revenues by product

| USD (\$) | 2015 | 2014 | 2013 | 2015 v 2014 | | 2014 v 2013 | |
|---------------|-------------------|-------------------|-------------------|------------------|-----------|---------------|----------|
| Products | \$ * | \$ * | \$ * | Var * | Var% * | Var * | Var% * |
| Arabica sacks | 8,277,700 | 5,690,000 | 5,690,000 | 2,587,700 | 45 | - | - |
| Barako sacks | 3,717,500 | 4,970,000 | 4,970,000 | (1,252,500) | (25) | - | - |
| Java sacks | 7,512,550 | 6,248,000 | 6,248,000 | 1,264,550 | 20 | - | - |
| Robusta sacks | 5,544,000 | 5,626,000 | 5,576,000 | (82,000) | (1) | 50,000 | 1 |
| Total | 25,051,750 | 22,534,000 | 22,484,000 | 2,517,750 | 11 | 50,000 | - |

Current year: Revenues rose by \$2.5m from \$22.5m in 2014 to \$25.1m in 2015 (11%). From a product perspective, the main drivers for the increase in revenue come from Arabica sacks and Java sacks. Revenues from Arabica sacks increased by \$2.6m from \$5.7m in the prior year to \$8.3m in the current year (45%), and revenues from Java sacks rose by \$1.3m from \$6.2m to \$7.5m (20%). These increases overcame a decrease in revenues from Barako sacks, which fell by \$1.3m from \$5m to \$3.7m (-25%). A detailed breakdown of revenue by product can be found in Section 2.

Three year trend: Revenues have trended upwards from \$22.5m in 2013 to \$25.1m in 2015 (+\$2.6m overall, 11%). From a product perspective, the main drivers for the increase in revenue come from Arabica sacks and Java sacks. Arabica sacks revenues increased from \$5.7m to \$8.3m over this period (+\$2.6m overall, 45%) and revenues from Java sacks rose from \$6.2m to \$7.5m (+\$1.3m overall, 20%). Revenues from Barako sacks offset the trend, falling from \$5m in 2013 to \$3.7m in 2015, a decrease of \$1.3m (-25%). A detailed breakdown of revenue by product can be found in Section 2.

2. Revenue Breakdown by Product

This section analyses the make up of total revenues in the year split by product and then goes on to review individual products in order of size / relative % of total company revenues with the largest revenues first.

Table 2. Revenues by product

| USD (\$) | 2015 | 2014 | 2013 | 2015 v 2014 | | 2014 v 2013 | |
|----------|------|------|------|-------------|--|-------------|--|
|----------|------|------|------|-------------|--|-------------|--|

5 Use Cases:

- CFO
- Accounts
- Junior/Senior Analysts
- Equity
- Sales Forecast



Current Problem

- Our ability to collect and store data has significantly outstripped our ability to make sense of it.
- Current BI tools still leave it to the user to extract what's important and meaningful.
- Graphs and computers are delivering numerical and graphic representations, but are still not able to reason to deliver genuine natural language content and recommendations.

“Data is created faster than jobs can be created to analyze it” McKinsey & Co.

With Arria - the engine does the work.



What We Do

We build NLG applications

1.

We take large quantities of data structured and unstructured

2.

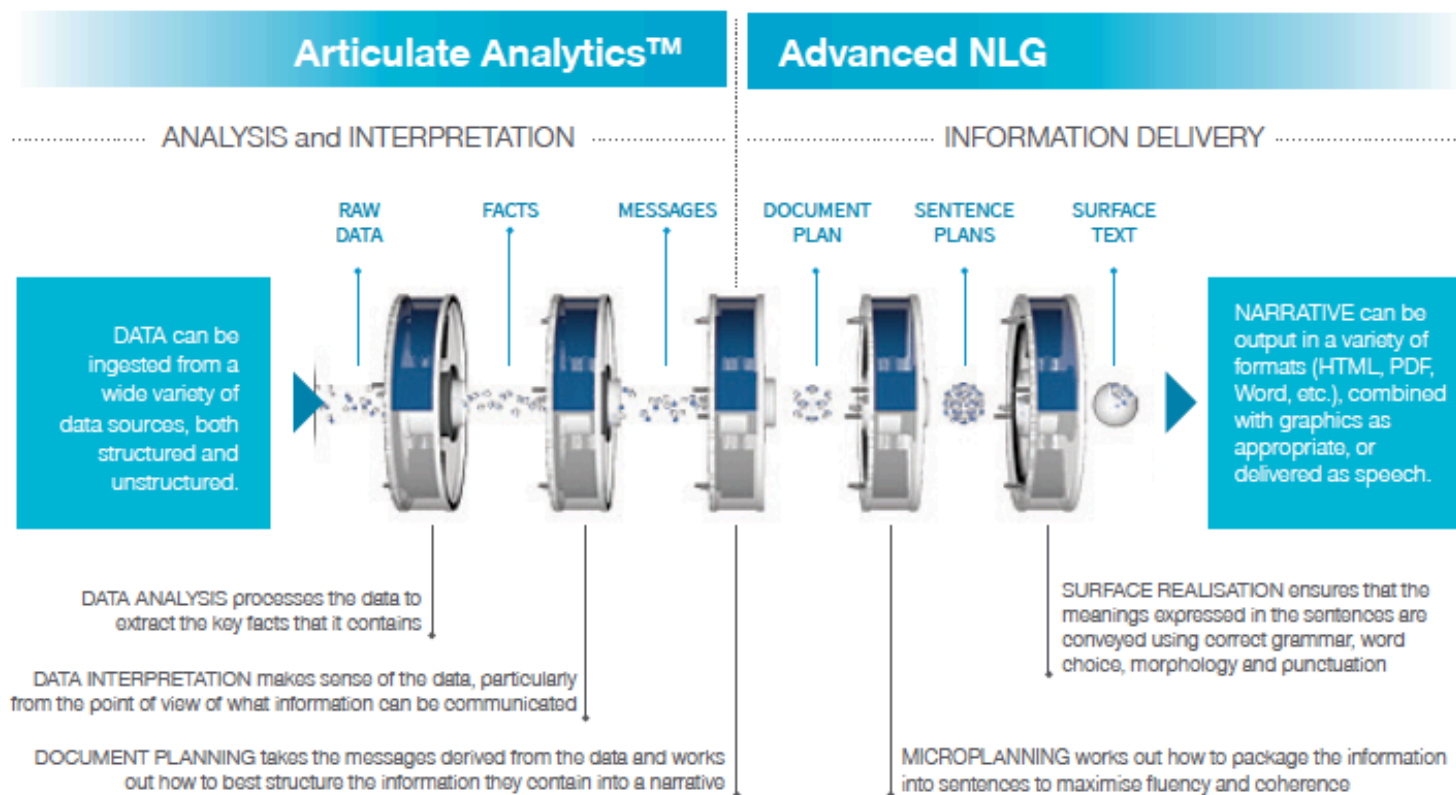
We apply cutting-edge Artificial Intelligence and Computational Linguistics

3.

We deliver text content in real time, written like a human being would write explaining the data and describes the context

The Arria NLG Engine is today's most powerful Articulate Analytics[™] and extensible NLG Technology on the market

How It Works



How We Build Your Application

Client Business Rules

Client Tone of Voice

Arria NLG Core Data Analytics

Arria NLG Information Delivery

DATA ANALYSIS & INTERPRETATION

INFORMATION DELIVERY

How We Deploy

Simple Single-Task
NLG Application

Platform that grows as your
needs require

Our NLG Engine as a part of your
technology stack



In the cloud



Hosted at your site



Embedded device

The market leader in real-time data storytelling



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Hyperion Focus 16

Thank you

