



**Development report #2**  
**August 2017**

# Marie automates success

# Marie Skłodowska Curie

(1867-1934)



# Timeline: The past

## First trials

Jan to Feb of 2017

A series of early tests. The overall goal, to go full-time, solidified.



## Full throttle

2nd Apr 2017

(just because 1st sounds like a joke), Intense work on the algorithm began on this date.



## 1st milestone

31st May 2017

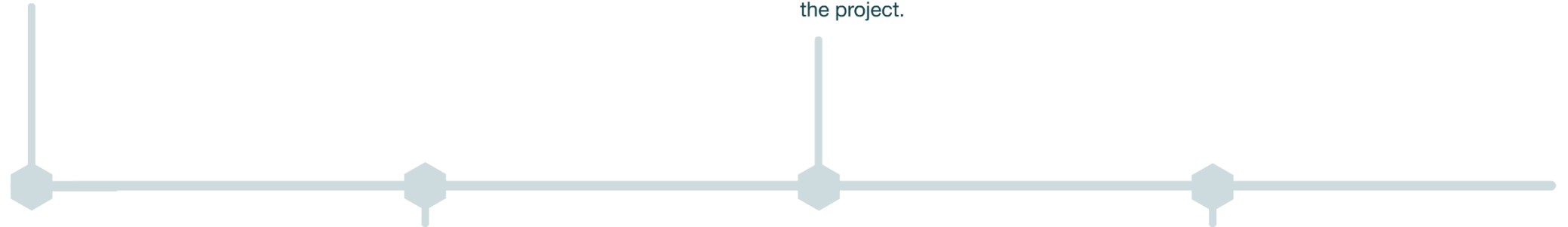
A first assesment, required to make a decision, to continue or to abandon the project.



## 2nd milestone

31 June 2017

The second 'Continue or Leave' moment. As the algorithm passed many tests, I decided to 'Continue' and moved to a development stage.



# Timeline: The past

## Development

June - July 2017

Intense phase with an ambitious goal- to achieve both efficiency and simplicity.



## Memory Matrix

August 2017

A component which allows Marie, to navigate through her memories.



## Software Development

August - September 2017

A two months phase that transformed the algorithm into a set of softwares.



## Content Cruncher

August 2017

A software that allows Marie to collect content and to select the most important chunks.



# Timeline: The present

And the future

## Context awareness

August 2017

Test how well Marie collects relevant informations and how it shapes her context understanding.



## Education

August 2017

Collecting vast amount of knowledge in many fields, to give Marie a proper cognitive background.



## Deep context

September 2017

Testing and tuning the algorithm with a large data sets.



## The Pilot

September 2017

Pilot programme and the demo version of Marie.

**September 31st - Marie will be ready to service first clients.**



# Stage 1: Memory Matrix

8 million people in a telephone box?

## Great retention

Memory retention means, that Marie keeps what she already knows and on top of that, creates new memories.

## Instant Access

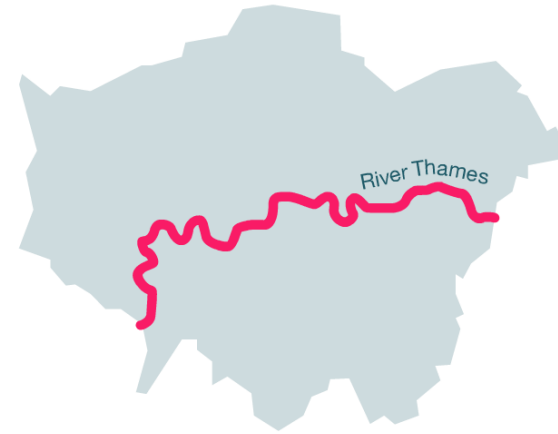
Vast amount of knowledge has to be easily accessible and not overwhelm the algorithm. It also does not require advanced infrastructure.

## Small Size

Marie stores an equivalent of 30 books (7700 pages) in just 1MB of data.

## No doubles

Memory Matrix is designed to quickly filter the data. It also allows a mix of languages and stores only one unit of the information.



Greater London: Population 8 million.



Server cabinet storage: 6 Petabytes

# Stage 2: Reading

## Marie just tunes sensors to the flow.

For a good algorithm, the language is irrelevant. What counts, is the information flow, similar to all forms of human communications.

Text, sound, voice or visual communication has the same pattern behind.





# Stage 2: Content Cruncher

## Examples of how it works.

Example of articles from the BBC.

- 1) Hammond regarding Brexit,
- 2) Grenfell Tower,
- 3) Shkreli court ruling.

Highlighted elements are selected  
by Marie as noteworthy.

NOTE: After completing the Education  
Stage Marie will process more  
complex content.

Nevertheless, she already has a great  
potential as a human augmentation.

1)

Chancellor Philip Hammond has said any "transitional deal" in the immediate period after Brexit must end by the time of the next general election. He said there must be "business as usual, life as normal" for Britons as the UK exits the EU. "Many things would look similar" the day after Brexit - on 29 March 2019 - as the UK moved gradually towards a new relationship with the EU, he said. **But he added the transition must end by June 2022, before the next election. The UK is due to leave the EU at the end of March 2019, but there has been increasing talk of a "transitional" (or "implementation") stage of around two years to smooth the Brexit process.** Mr Hammond, who has been calling for Brexit talks to prioritise the economy, told BBC Radio 4's Today programme: **"I can't tell you a precise period of time because we haven't had that discussion yet, it will be driven by technical considerations - how long it will take us to put the necessary arrangements in place.**" People have talked about a year, two years, maybe three years... I think there's a broad consensus that this process has to be completed by the scheduled time of the next general election, which is in June 2022. **Chancellor Philip Hammond tells Radio 4's Today a Brexit "transitional deal" must end by 2022** On Thursday, Immigration Minister Brandon Lewis said it was a "simple matter of fact" that EU free movement rules - seen as a key issue in the EU referendum campaign - would not apply after 2019. Mr Hammond said he was right to say so because freedom of movement was an EU concept and the UK would leave the customs union and single market on 29 March 2019. But he said the question was "what happens next" so that British people and businesses could "get on with their lives" without "massive disruption". "On the first day after we leave the European Union, of course many things will look similar because that is the starting point." 'Matter of fact' He hoped that "in the immediate aftermath ... goods will continue to flow across the border between the UK and the EU in much the same way as they do now". **On whether EU citizens would continue to be free to enter the UK, he said it would be "some time before we are able to introduce full migration controls between the UK and the European Union".** "That's not a matter of political choice, it's a matter of fact. **We have to put in place quite a lot of new infrastructure, we will need a lot of new people, we will need new IT systems... This is going to take a while to deliver."**

# Stage 2: Content Cruncher

## Examples of how it works.

2)

**Cladding and insulation used in at least 60 tower blocks has failed a new fire safety test, the BBC understands.** The test was more thorough than previous checks after the Grenfell Tower fire, which just examined cladding from high-rise buildings. The new test checked the cladding in combination with the foam insulation that was used in Grenfell. It is thought nine blocks in Salford are the only local government-owned buildings to be affected so far. **Local Government Association chairman Lord Porter said housing associations and private sector landlords will be among those that own the 60 tower blocks which failed the new fire test. He added that intellectual property rights on the installation of cladding systems means the identification of tower blocks affected by fire safety issues may not be made public.** The Department for Communities and Local Government will publish its full findings of the "whole system fire test", along with guidance, later this morning. At least 80 people died in the Grenfell Tower fire in North Kensington on 14 June. The test - conducted by the Building Research Establishment near Watford - involved starting a fire underneath a large-scale mock-up of the insulation system used at Grenfell. The mock-up used a so-called PIR plastic foam, a type of combustible insulation, and aluminium panels with a combustible polyethylene plastic core. **This is the most flammable of the six combinations of insulation and cladding that will be tested.** Previously the core of cladding from tower blocks was tested, but Lord Porter said: "It was fairly evident from the Grenfell fire that there was more than just the panels that was a fire risk on that building." Image caption The test rig at the BRE before the aluminium cladding was installed, showing the interior design with the silver foil covering the insulation Salford Council had already said it expected its towers to fail. The nine blocks built in the 1960s were re-clad recently with shiny coloured panels, and insulation to cut energy bills. One resident told the BBC it was "like sitting on a tinderbox". Salford had already begun removing cladding and the process will continue. Deputy mayor John Merry said tests would take place in August to ensure new cladding systems "meets the necessary safety standards". Some housing associations in Greater Manchester have changed their "stay put" fire safety policy to a full evacuation of the buildings following advice from the fire brigade. **Salford, is one of nine local authority buildings which has been affected by the new cladding systems test It is likely to cost the authority tens of millions of pounds and it is asking for help from central government.** Lord Porter said he hoped the Treasury would provide some of the money required by local government to replace cladding. Chancellor Phillip Hammond said "no required safety work will not go ahead because of lack of funding".

3)

**'Pharma bro' Martin Shkreli convicted of fraud. Former pharmaceutical chief executive Martin Shkreli has been found guilty of three counts of securities fraud.** A New York City jury cleared him on five other counts after five days of deliberations. He was on trial in relation to a drug company he previously headed, Retrophin, and a hedge fund he managed. Shkreli, 34, was branded "the most hated man in America" in 2015 when his firm hiked the price of a medication used by Aids patients. **Despite facing prison after being convicted of two counts of securities fraud and conspiracy to commit securities fraud, Shkreli professed himself pleased with the outcome.** Standing outside the court in Brooklyn, he said: "This was a witch hunt of epic proportions. "And maybe they found one or two broomsticks but at the end of the day we've been acquitted of the most important charges in this case and I'm delighted to report that." FBI investigator William Sweeney praised the conviction saying that Shkreli had "misled investors in his self-indulgent scheme". Shkreli rocketed to notoriety in 2015 after raising the price of a lifesaving anti-parasite drug called Daraprim by 5,000% upon acquiring rights to the medication. Overnight, the price of the drug soared from \$13.50 to \$750 per dose. **Over the course of a five-week trial, jurors heard how Shkreli lied to investors about the performance of two hedge funds, MSMB Capital and MSMB Healthcare.** He then stole from Retrophin, his pharmaceutical company, to pay investors back, prosecutors said. "Martin is a brilliant young man," his lawyer, Benjamin Brafman, said after Friday's ruling. "Sometimes, people's skills don't translate well," he told reporters, adding that his client suffers from "an image issue". During the trial, the attorney portrayed his client as a misunderstood "nerd" who turned up at work wearing a doctor's "stethoscope and bunny slippers". One investor had testified that Shkreli reminded him of the autistic savant played by Dustin Hoffman in the movie Rain Man. His attorney quoted a Lady Gaga song title in telling jurors Shkreli "was born this way". Shkreli's negative press was so widely known that it took the court three full days just to find 12 jurors who did not have a pre-existing opinion of him. Several prospective jurors were dismissed after referring to him as "a snake" and "an evil man", the New York Post reported. **Judge Kiyo Matsumoto felt obliged at one point to issue a gag order, after Shkreli surprised reporters during a lunch break by ranting against enemies whom he said were trying to "blame me for capitalism".** The so-called "pharma bro" often vented his spleen on social media, eventually getting himself banned from Twitter after harassing a female journalist. He often appeared to relish in the negative publicity he received. Shkreli was also admonished after refusing to answer questions during testimony to congressmen, whom he later called "imbeciles". **In a bizarre coincidence, another man who is also named Martin Shkreli was arraigned before the same Brooklyn judge on Friday. "There's another Martin Shkreli in this case. How weird is that?" quipped one lawyer during the court proceedings.** Mr Shkreli, 59, who is accused of money laundering, told reporters about his younger doppelganger: "I don't need that kind of fame."

# Stage 3: Understanding

A path to a real cognitive understanding.

Stage 3 starts with a "Blank Brain".

A clear memory and a small data set, of 18-page long document from

Wikipedia:

**European History/The Crises of the Middle Ages,**

which you can review on the internet.

Keep in mind, that Marie has no prior knowledge about the language, content or the context.

Initial tags (Content Cruncher):

**royal, ages, middle, these, formed, kings, end, armies, brought, history**

Tags after cognitive analysis - "Cognitive Tags":

**middle, ages, kings, formed, armies, royal**

Single, most relevant sentence selected:

**"Despite many local wars and disputes between knights, the High Middle Ages, from 1000–1250, saw growing populations and prosperity enough to build great cathedrals and send European armies abroad on crusades."**

# Stage 3: Understanding

## Inside Marie's brain.

What Marie understands when we type a word: "Sea" (in an order of relevance).

Word: "SEA"

Results:

"BALTIC"

"NORVEGIAN"

"TRADING"

"TOWNS"

The word "Authority" has just one reference.

Word: "AUTHORITY"

Results:

"CHURCH"

The word "Trading" has two references.

Word: "TRADING"

Results:

"NORVEGIAN"

"BALTIC"

If we ask for the list of references for a phrases: "Norwegian" AND "Baltic", we have just one result:

Word: "NORVEGIAN" **AND**

Word: "BALTIC"

Results:

"SEA"

The test represents only 18-pages long data set - cognitive memory. In the future we will conduct broader tests with a greater number of contents, to tune the algorithm even further.

# Stage 4: Education

## The plan for the education.

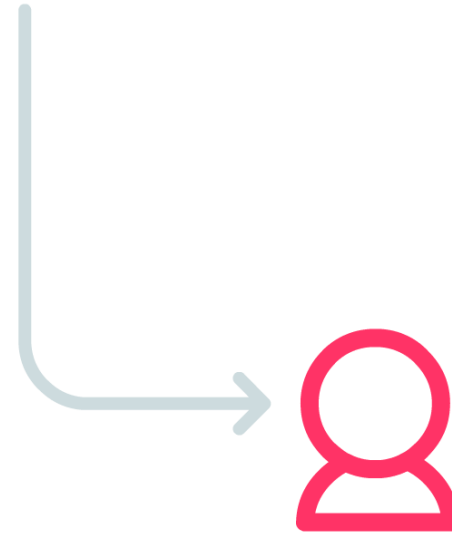
A single human being cannot collect more unique content, than an equivalent of 3000 books. Currently, the algorithm is tested with an equivalent of 500 books and more content is awaiting.

After that, Marie will enter an automated mode - a fully unsupervised phase of self-learning - from the internet.

Current pace of the education shows, that Marie consumes content much faster than mankind could generate.

## 3000 books

(150 words per minute)



# Stage 5: the Pilot

Everyone should be able to see Marie's potential in a real-life scenario.

On September 2017, Marie starts providing analytics for the **commodities markets in the Americas**.

News coverage in **English, Spanish and Portuguese** will be used, to form a judgement about the market situation.

The website provides a timeline as well as weekly reports, along with a sentiment chart.

CATEGORY:

**Coal**

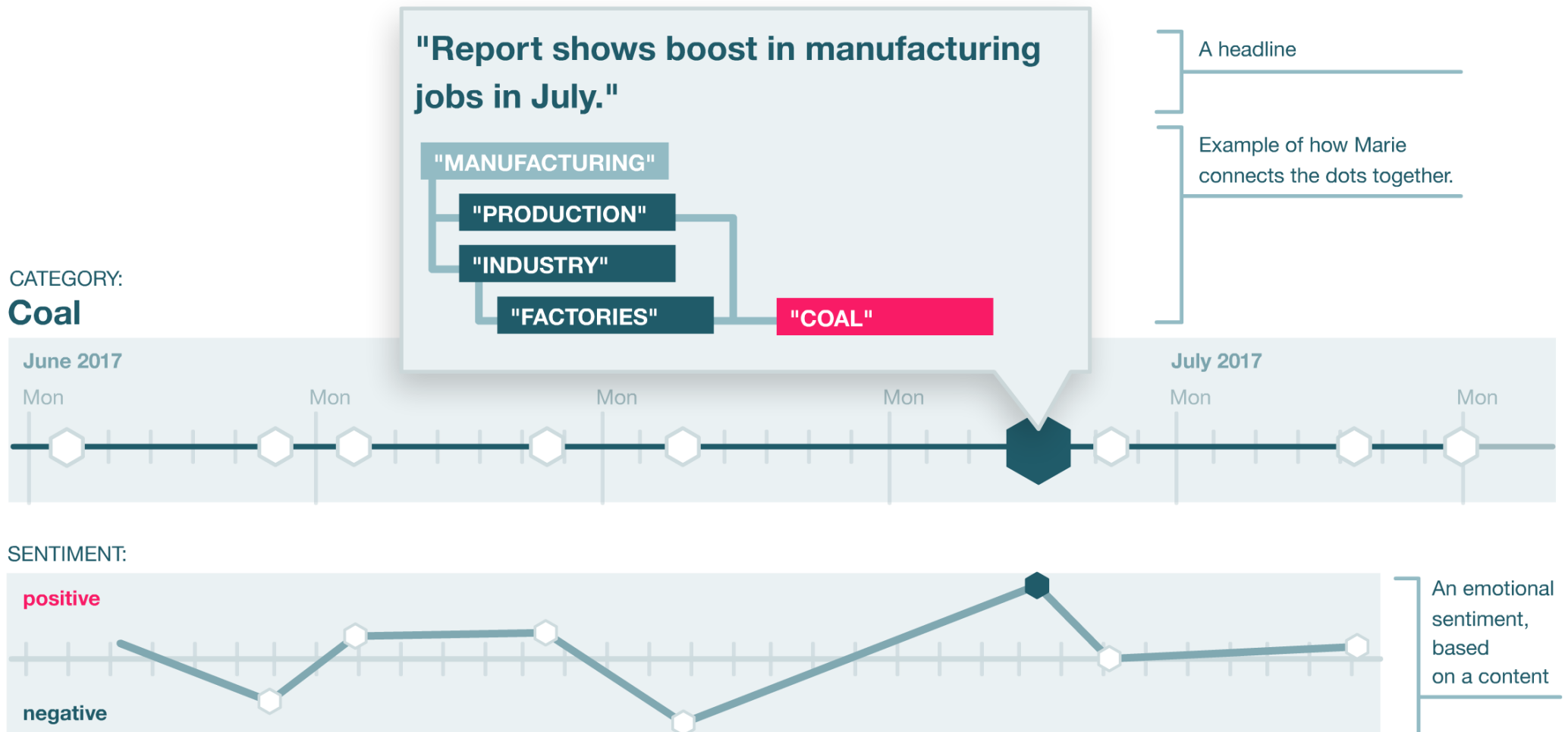
"Report shows boost in manufacturing jobs in July."





# Stage 5: the Pilot

Marie's every decision can be monitored online for a better overview.



# Stage 6: Let's do business!

Maybe it's time to talk business?



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