Experiences from the Wolfram|Alpha project

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What is Wolfram|Alpha?

A "Computational knowledge engine"

A new way of getting answers on the web

Bespoke answers to your questions, not links to text-matched document content.

A long - term project to make all systematic knowledge immediately computable by anyone

Why automated computation is important

Improve access to enterprise data

Desire for information ≠ Ability to use information

Make your data DO something

Data + Computation > Data

Maximise use of intellectual assets

Intellectual assets	Undeveloped assets	Wasted assets

Collected data
Models & analysis
Calculated results
Conclusions and recommendations

What does computation give you?

Finding the "leaf" in a "forest" of information

life expectancy uk male 39
temperature oxford 3 june 2009
earthquakes geneva 2000-2010
mars geneva midnight

Combining knowledge

weather london geneva
population france/uk
weather paris when nikolas sarkozy born

Creating new knowledge

100g flour+2 egg+100ml milk+pinch salt
next eclipse geneva

Applying knowledge directly

mortgage 150,000 euro , 6.5%, 30 years
wind chill -20 centigrade 40 mph

Tricky issues

Ambiguity

gold
director gold
temperature big apple

Insufficient queries

running 20 minutes male 13 stone

Insufficient knowledge

Expert access

Make data ready for computation

Provide automated tools

Precise API vs Soft API

How do we do it?

We started 23 years ago!

We built *Mathematica* first (Common theme: automating computational knowledge)

We built grid*Mathematica* for massively parallel computation

We built web*Mathematica* for web based deployment of computation

THEN we could make Wolfram|Alpha

Thank you...

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