

The New Era of Knowledge

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Computation comes of age

Everywhere

...High-powered

....Easy-to-access

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Consequences

- ...who can process information and compute answers
- ...what publishing information constitutes
- ...where value lies in the supply-chain of knowledge (including data curation)
- ...what we need to learn for this new era
- ...even what think of as (human) expertise

New modality for communicating

The knowledge app: "Let the reader drive"

Buying Watermelons Intelligently

parameters melon 1

melon radius

shell thickness

unit price

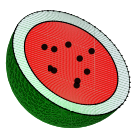
parameters melon 2

melon radius

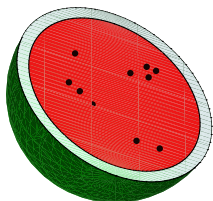
shell thickness

unit price

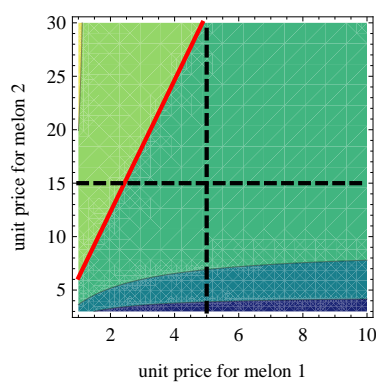
melon 1



melon 2



evaluate	melon 1	melon 2
melon radius	1.5	2.5
shell thickness	0.3	0.3
core volume	7.24	44.60
unit price	5	15
value / price	1.45	2.97
buy decision	no	yes



Contributed to demonstrations.wolfram.com by: Frederick Wu

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Making it everyday

Easy authoring (eg. **widget builder**)

Forthcoming: Computable Document Format (CDF)

Computable knowledge assets

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Knowledge assets: publicly funded R&D

\$300 billion R&D funded by governments.

What's the output?

Low communication bandwidth: scientific papers

Documents v. applications (future: CDF)

Results for immediate reuse, further working

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Knowledge assets: governments

Democratizing knowledge means open and usable

Usable increasingly means computable

Biggest user of government data: governments. More efficient internally.

Cameron: get citizens to use government data to hold government to account

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Knowledge assets: corporate information

"Drive-by" answers hard to get from ERP systems

Moving research assets to development and others...

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Knowledge assets: human experts

Leverage human technical expertise, one level down

Instead of direct, through computer intelligence

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Paradox: change our education for this New Era

Maths at centre of debate.

New approach based on computers doing calculating.

Launched computerbasedmath.org

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Summary:

New Knowledge Ecosystem →
New opportunities for Science