# Using Maps to Manage Software Projects

**SOFTWARE FOR DOMAIN EXPERTS**

"Digital Transformation – the Mapmaking as a Service Business Opportunity."

Zois Kokkonis

The Cube, Athens, October 17th 2019

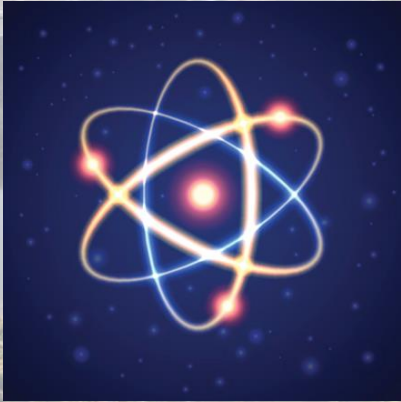"IDC estimates that there is the potential for over $18 trillion of new value to be harvested."
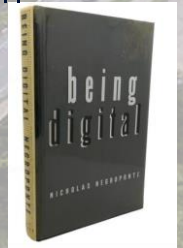— Bob Parker,
Group Vice President and Digital Transformation lead at IDC

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… and human society …

"The change from atoms to bits is irrevocable and unstoppable. Why now? Because the change is also exponential — small differences of yesterday can have suddenly shocking consequences tomorrow."

- N. Negroponte [1995] "Being Digital"

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# Redefining "value" and "work"

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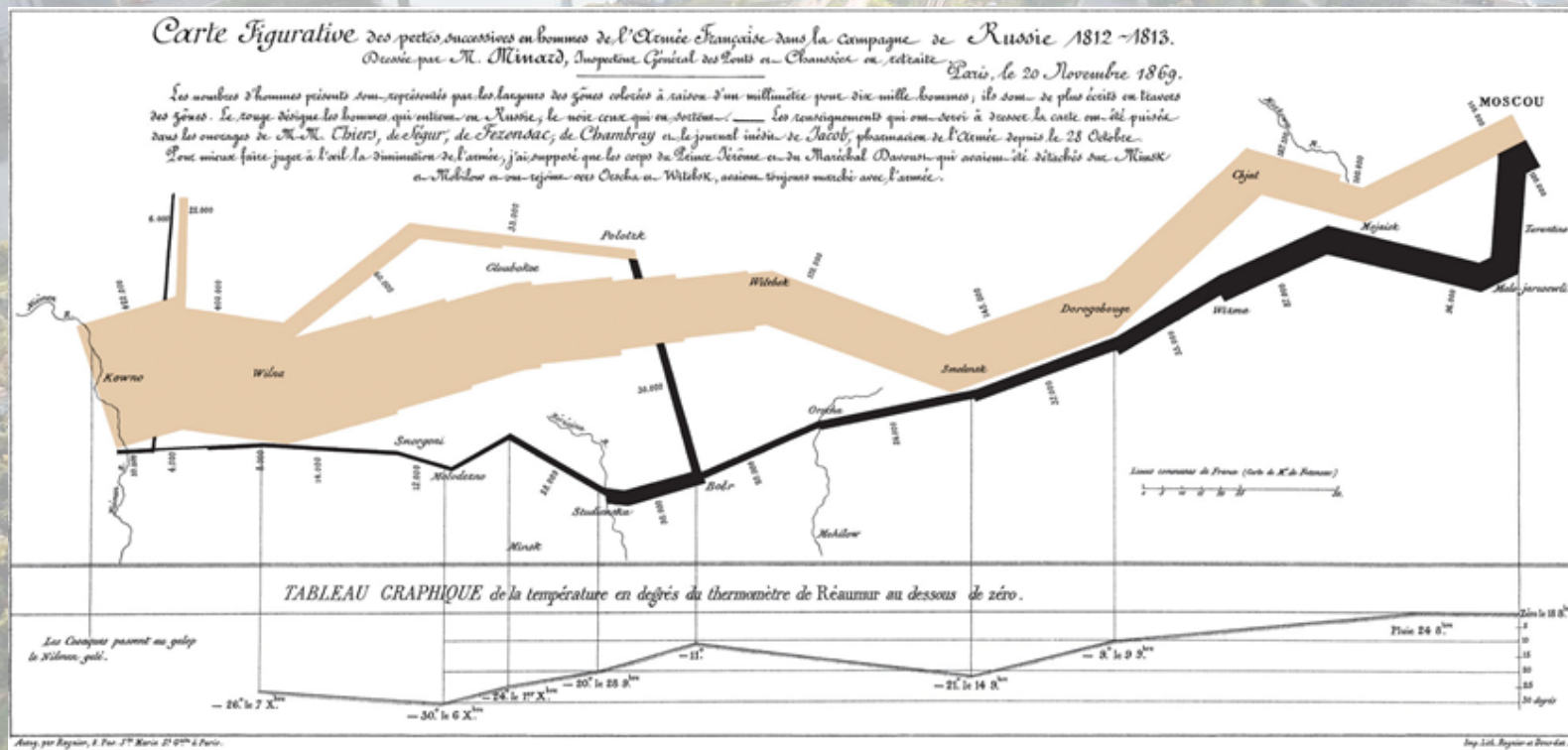
# The Digital Twin – creating a digital replica

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# Building physical models…

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# Ptolemy – the World Map

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# Charles Joseph Minard – Napoleon's campaign in Russia

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# John Snow - The Broad Street cholera outbreak

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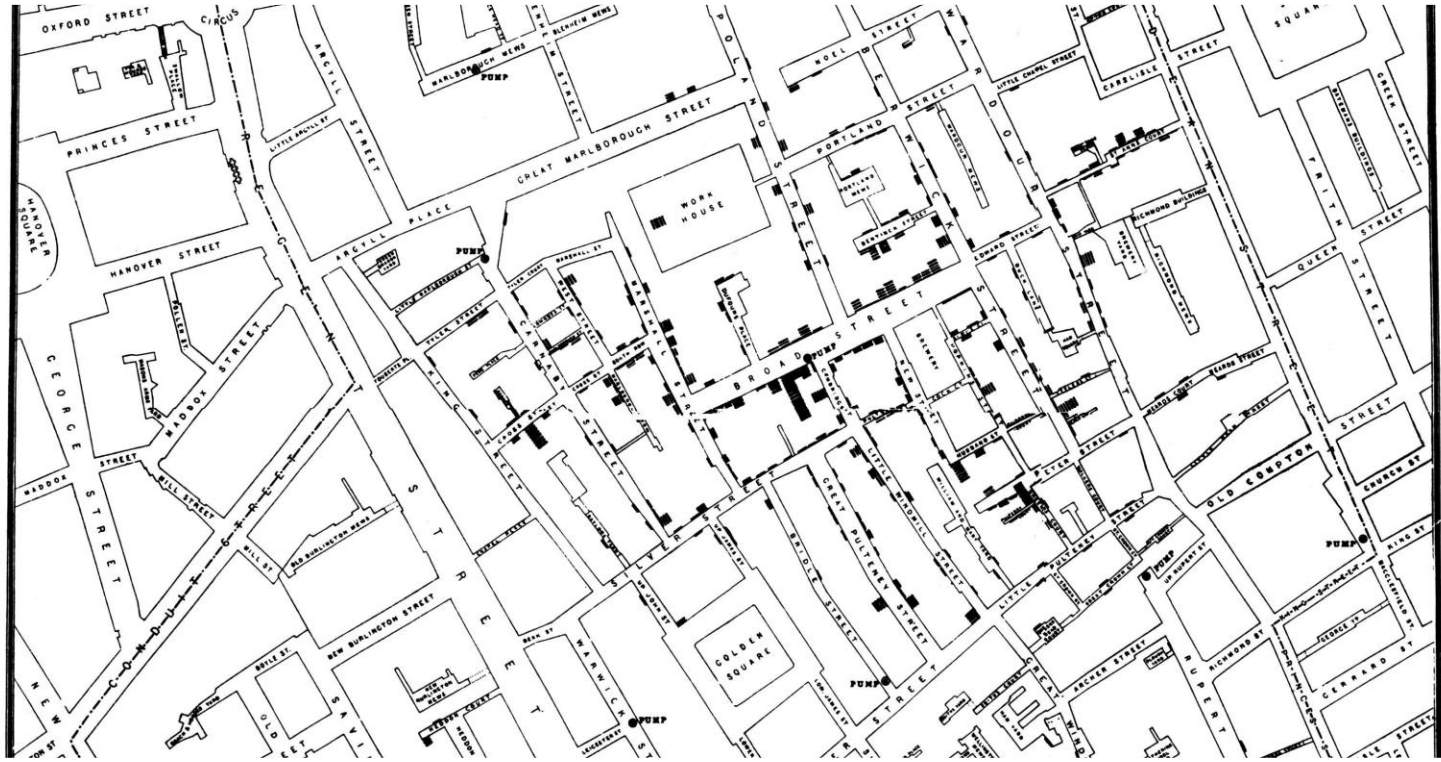
# Ptolemy – the World Map

# Google Maps

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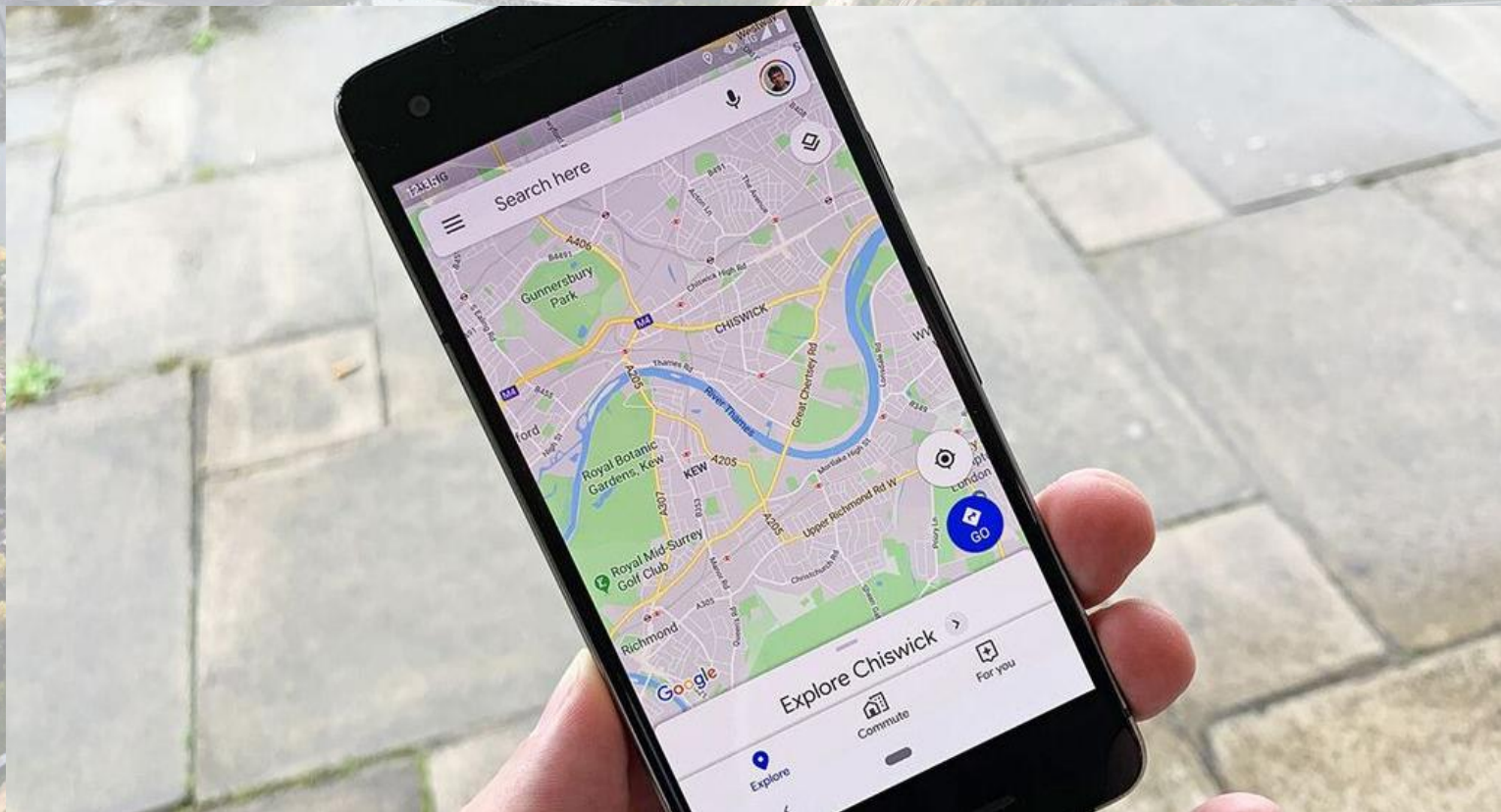
Gather input data from several sources …

Code

Bugs

Monitoring

Tests

Profiling

Requirements

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# … create the appropriate visual representation for each stakeholder



Management

Dev

QA

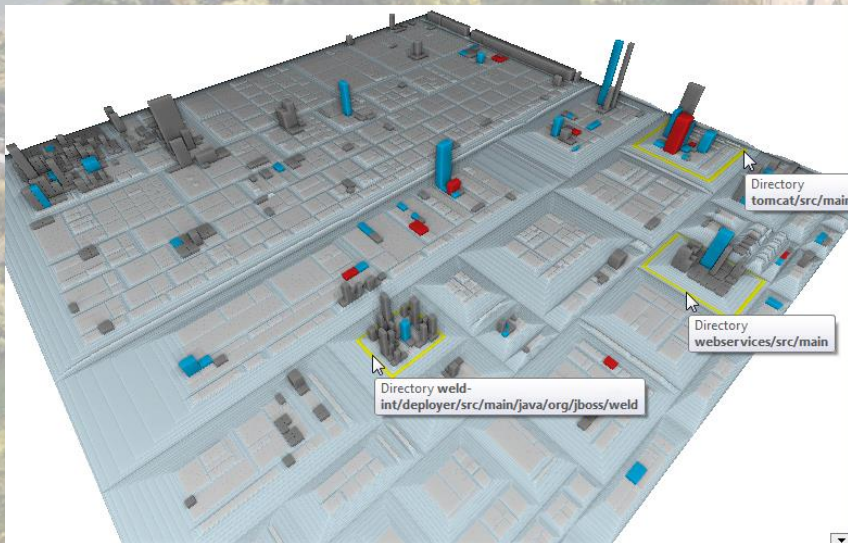ProdM

Arch

Ops

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# Data Visualization for Software Analysis – an active research area

Source:
Johannes Bohnet and Jürgen Döllner.
"Monitoring Code Quality And Development Activity By Software Maps".
Proceedings Of The IEEE ACM ICSE Workshop On Managing Technical Debt, 9-16, 2011.





Directory
tomcat/src/main

Directory
webservices/src/main

Directory weld-
int/deployer/src/main/java/org/jboss/weld

Source:
Daniel Limberger, Willy Scheibel, Jürgen Döllner, and Matthias Trapp.
"Advanced Visual Metaphors And Techniques For Software Maps". 12th International Symposium On Visual Information Communication And Interaction (Vinci 2019). ACM, 2019.
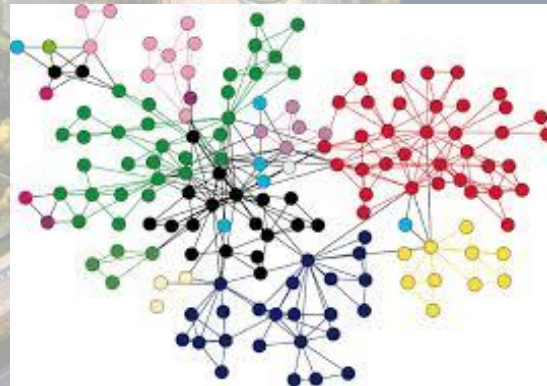
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# Nokia Athens Technology Center – Software Quality Evaluation Platform

**Source Code**



**Test Cases**



**Graph Representation**
Focus: *Relations*



- ✓ Graph theory
- ✓ Clustering
- ✓ Time series analysis
- ✓ Machine learning

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Presented in Oπε\n Conf, Athens 2019

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# Thank you!