



FP7 Coordination and Support Action to fund 50 technology transfer projects (TTP) in computing systems. This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement n° 609491.

ACCELERATED GENOME-BASED DIAGNOSTICS

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TTP Problem

CHALLENGE 1

- Sequencing data grows faster than storage capacity
- Need for data compression and management

CHALLENGE 2

- Analysis complexity grows faster than computer speed
- Need for acceleration of DNA analysis algorithms

CHALLENGE 3

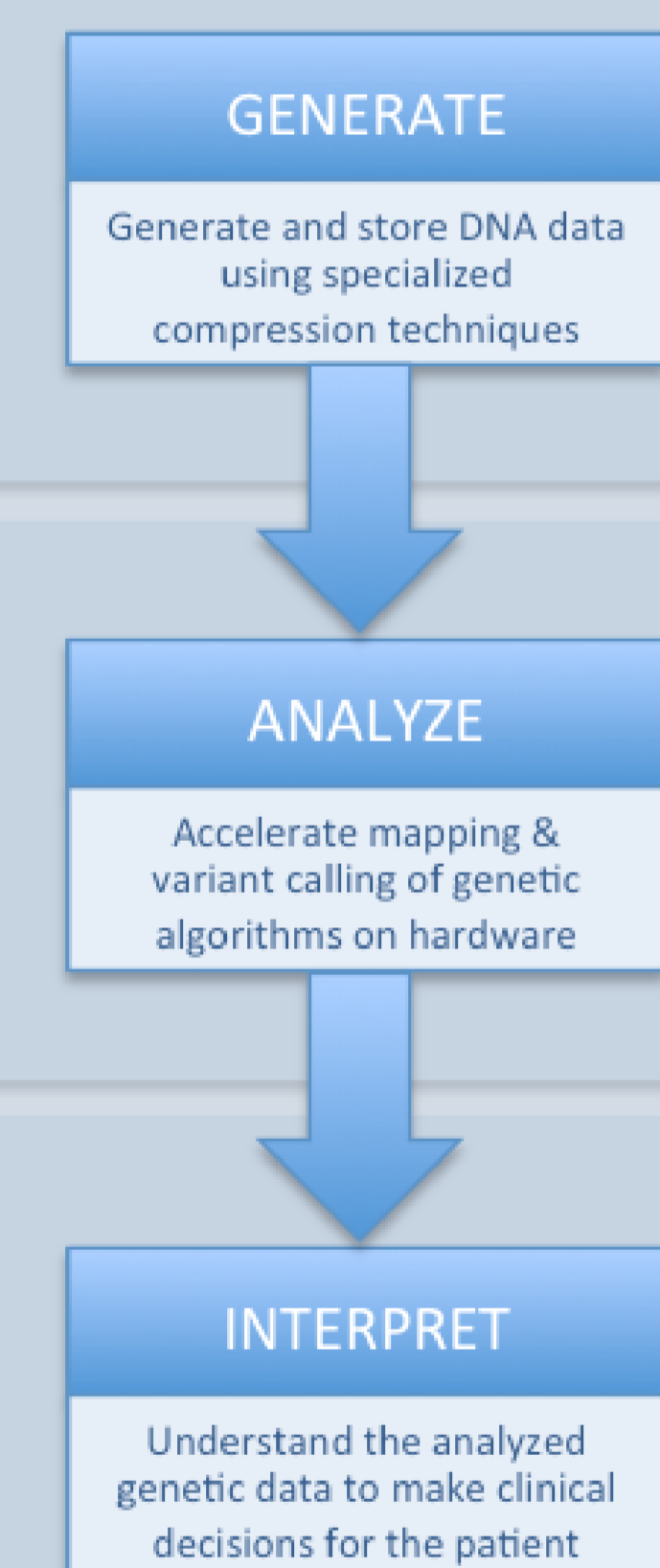
- Relative cost of interpretation is increasing
- Nature of data interpretation is subjective
- Need for innovative DNA visualization

TTP Solution

APPROACH 1

- New DNA-specific compression algorithms
- On-the-fly compression/decompression hardware

Diagnostics pipeline



APPROACH 2

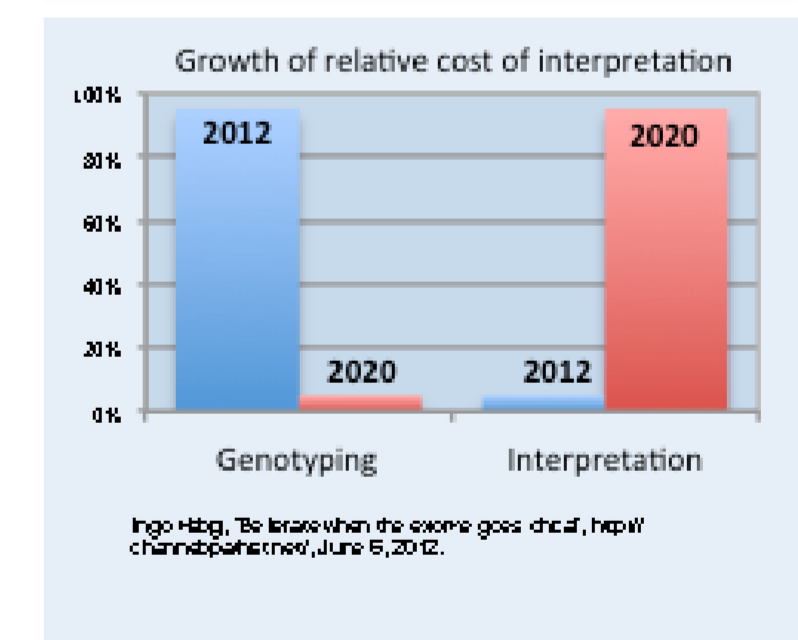
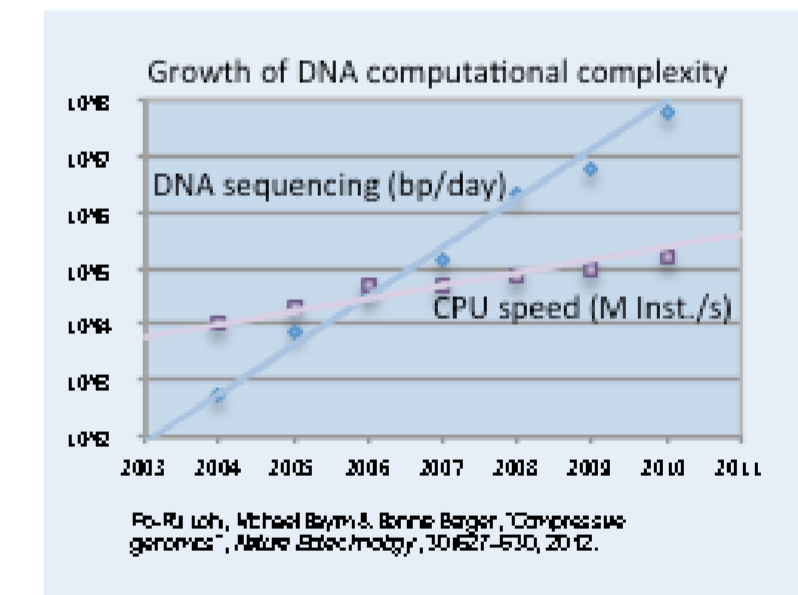
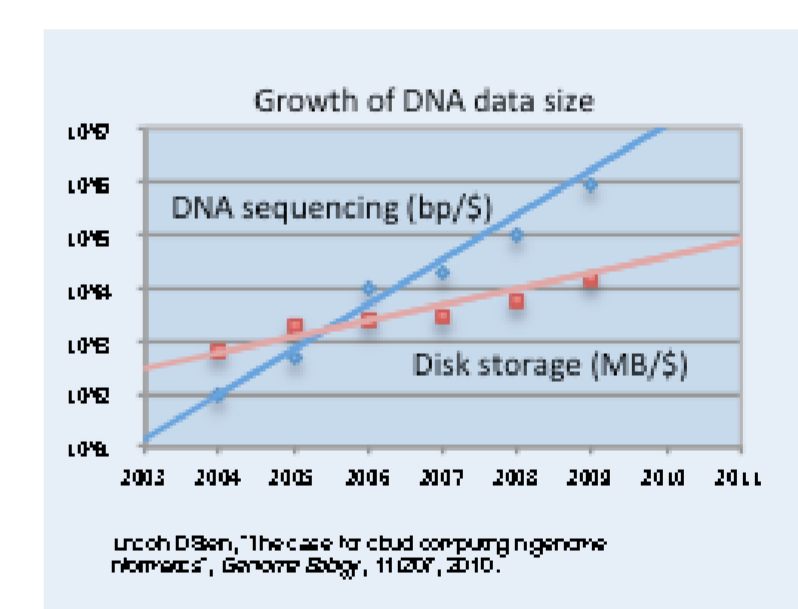
- Hardware-based optimization
- Direct mapping to hardware

analysis algorithms hardware-based optimization

APPROACH 3

- Develop user-friendly interfaces
- Provide training and consultation with the users

in consultation with the users notations of relevant data



TTP Impact

Up to 5x reduction in data size

Up to 10x reduction in computation time

Users involvement ensures relevance of solutions

TTP Facts

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 TETRA COM contribution:
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