Innovation hubs as a tool for innovation in agriculture
Case study: SIH@FINKI

High Level Forum on e-agriculture
"2gether 4 Strong Digital Agriculture"
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Agenda

- Regional Social Innovation HUB @FINKI
- Innovation Support Platform
- Our Projects
- Technology trends
- Conclusions

Social Innovation HUB @FCSE

- Founding partners:
  - **United Nations Development Programme.** UNDP has extensive expertise and a deep understanding of the social, economic and environmental issues facing the country.
  - **Faculty of Computer Science and Engineering.** It is the largest and most prestigious faculty in the field of computer science and engineering in Macedonia, and among the largest faculties in that field in the region. 3000 Students, 40 PhD professors,40 Masters associates.
- The HUB involve partnership with
  - The private sector
  - Local start-ups and innovators
  - National and local government
  - Civil society
  - Citizens (including young people and other vulnerable groups)



Innovation trends: Using consumers as innovators

- Consumers also co-create with companies
  - the online encyclopedia Wikipedia, for instance, could be viewed as a service or product created by its distributed customers.
- Companies that involve customers in
  - design, testing, marketing (such as viral marketing), and the after-sales process get better insights into customer needs and behavior and may be able to cut the cost of acquiring customers, engender greater loyalty, and speed up development cycles.
- Consumers increasingly want to engage online with one another and with organizations of all kinds.
  - Companies can tap this new mood of customer engagement for their economic benefit.

Innovation structures and incentives

- Traditionally, the private market has been seen as the primary source of innovation.
  - It has the structures, mechanisms, and incentives that drive innovation.
  - It has the power of 'creative destruction', destroying the old in order to open the way for the new.
- Neither the state nor the grant economy has the structure or incentive to innovate in this way.
  - It is argued that they lack the mechanisms that allow the best to flourish and the less effective to wither away
- The household can generates ideas
  - But its lacks the capital, surplus time, and organizational capacity to develop.

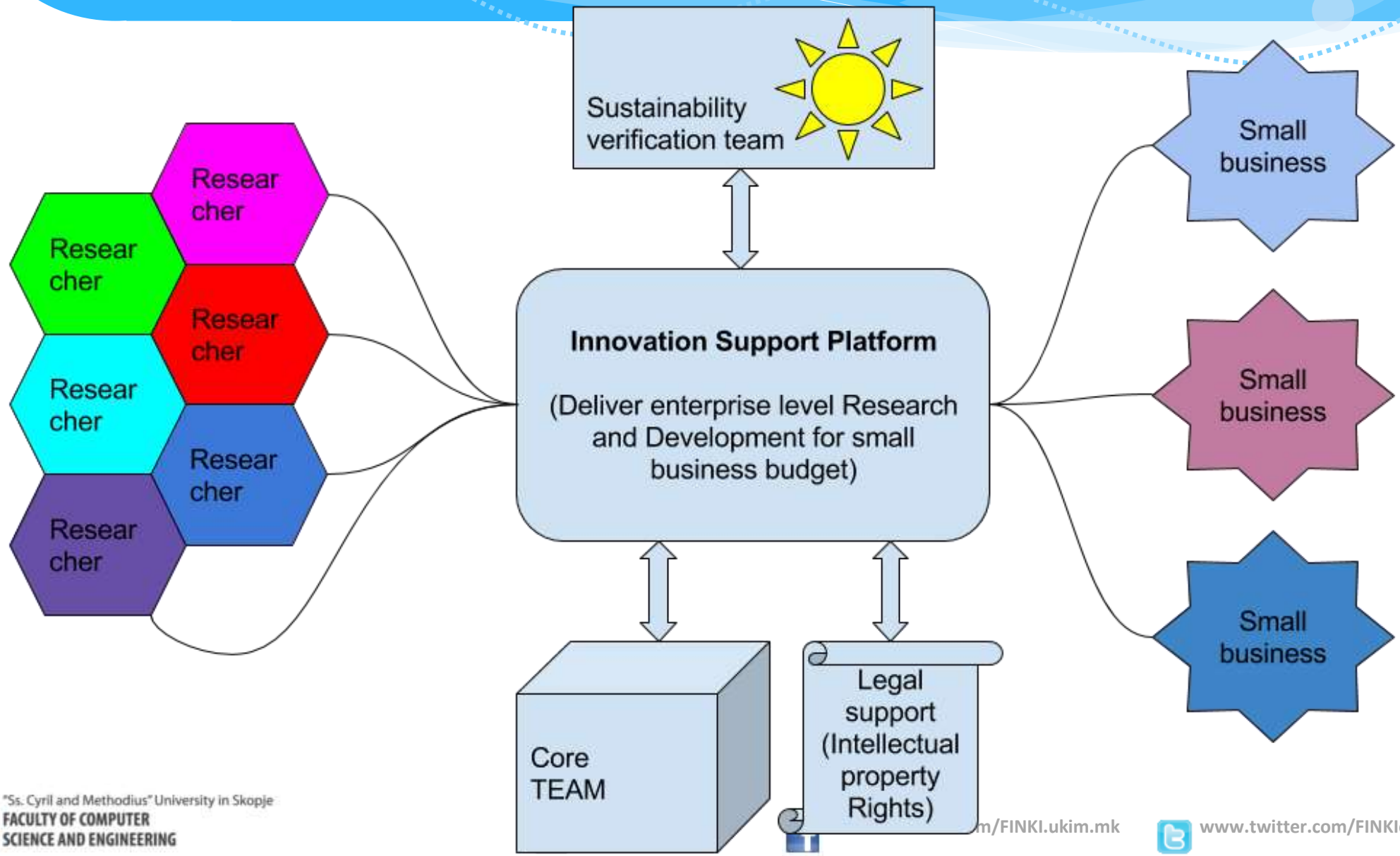
Social Innovation

- Social innovation refers to new strategies, concepts, ideas and organizations that meet social needs of all kinds — from working conditions and education to community development and health — that extend and strengthen civil society
  - (source Wikipedia)
- Social Innovation is often an effort of mental creativity which involves fluency and flexibility from a wide range of discipline
- It is all about how we can improve societies' capacities to solve their problems.
- Mobilize the ubiquitous intelligence that exists within any society

Innovation hubs as a tool of enabling of social innovation

- Innovation hubs are spaces and places where
  - people are brought together to learn, share, and collaborate.
  - social entrepreneurs, community activists, non-profits, and others, can come together to share ideas, insights, and experiences.
- They also provide economies of scale and scope – as hub members share associated costs (overheads, meeting rooms, connectivity, and so on).
- It is all about how we can improve societies' capacities to solve their problems.

Innovation Support Platform



Project Management and Organization

- Design thinking approach
  - Product centric approach
  - Close collaboration between researchers, company and costumers
- Team composition
  - Company representatives
  - Customers
  - Researchers with different profiles
  - Software developers

What we have done SIH@FCSE

- SMS Application for Reducing Pollution in Resen (Prespa Lake)
- Prespa Apple Land: Game
- Using drones to monitor Lepenec River
- Climate Change Camp #OdTebeZavisi
- Winter Course in Design Thinking

SMS Application Helps Reduce Pollution in Prespa Lake Region

- **Goal:** Informing the farmers about the right moment for threating the apple trees with pesticides and other agriculture measures
- Preventing from pollution caused by overuse of pesticides in the Prespa region
- Functionalities:
  - sending SMS with information to farmers in the Prespa region
  - Preventing pollution of the Prespa Lake
- **Results**
  - Recent survey data: **82%** of farmers directly or indirectly follow the recommendations on the use of pesticides by the pests and diseases monitoring system
  - National Geographic *republished a post* about this project, as an innovative one

Prespa Apple Game



Prespa Apple Game





Supported actions

- Plowing
- Digging
- Spraying
- Fertilizing
- Pruning
- Irrigate
- Harvesting

- Depend on
  - The weather conditions
  - The current date



Users game testing

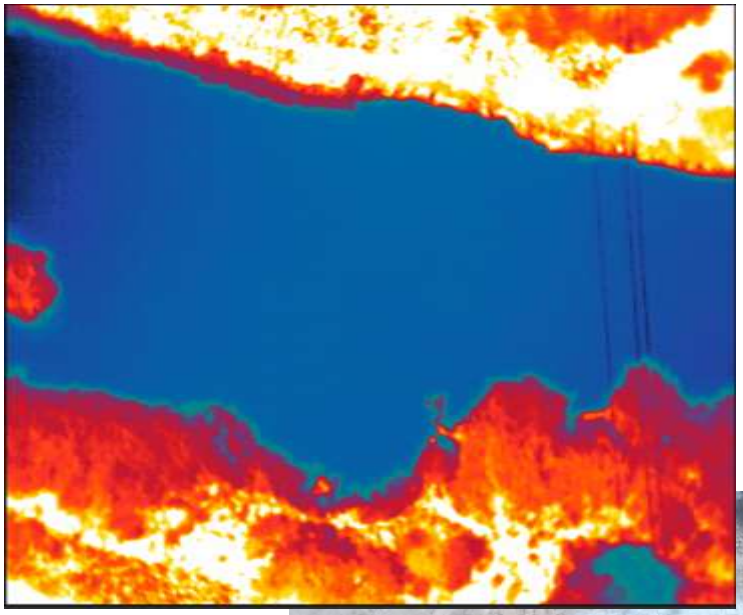


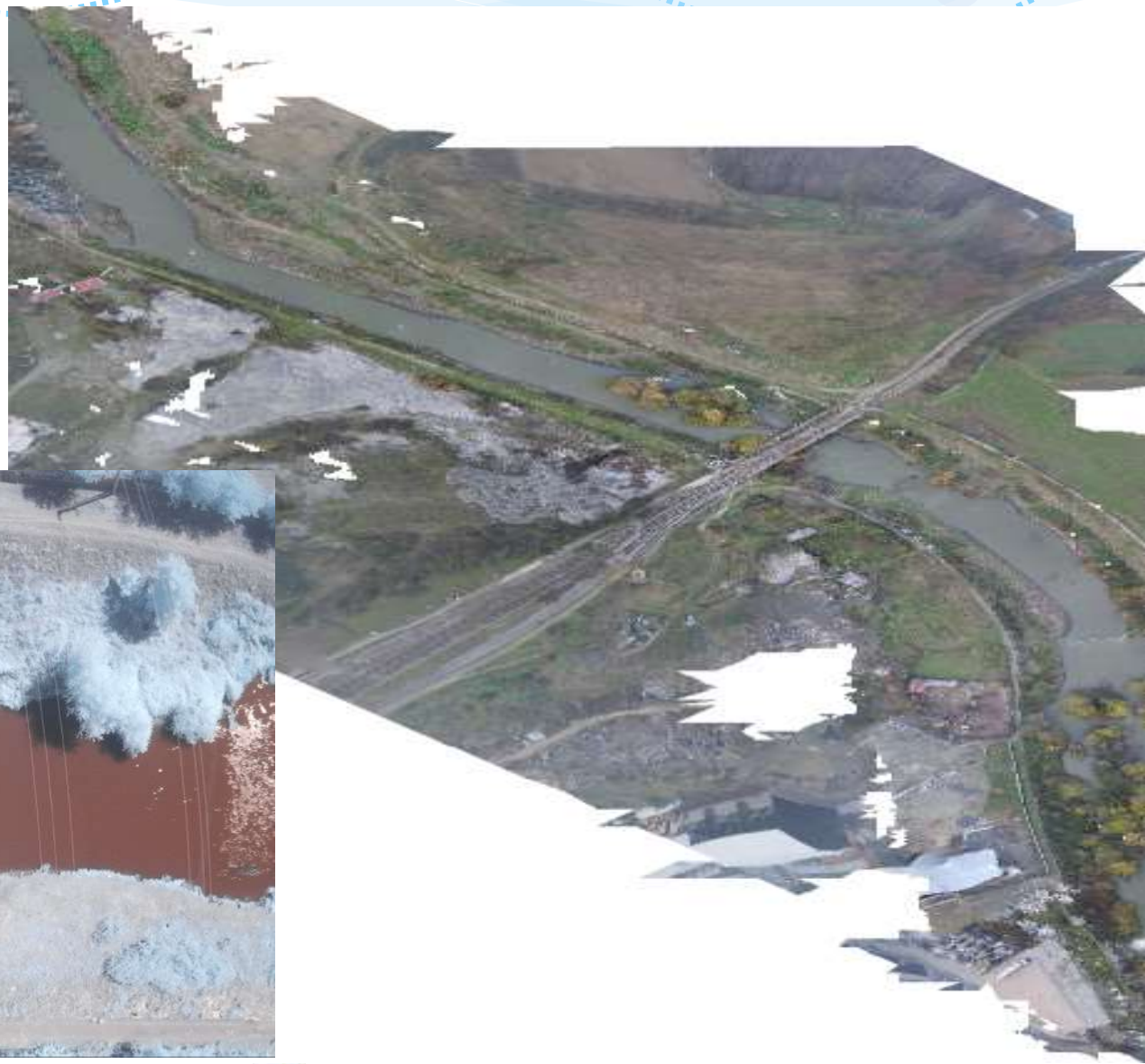


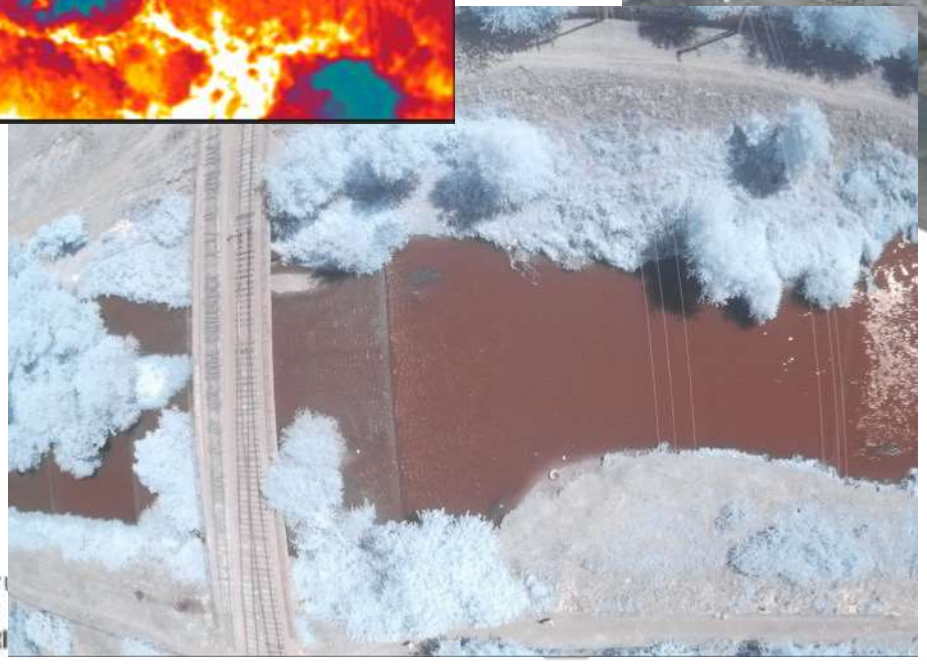




Using drones to monitor Lepenec River



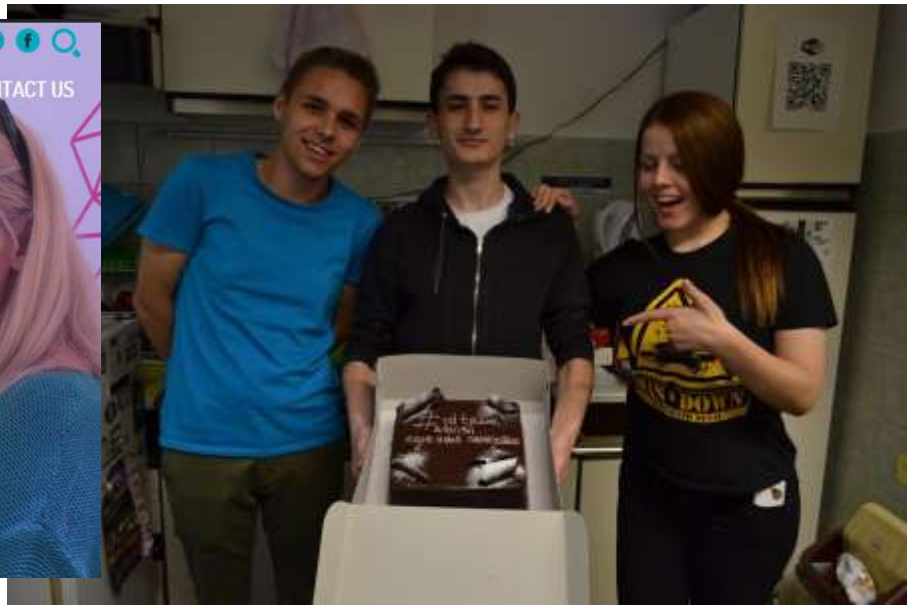




#OdTebeZavisi

- Social innovation HUB is supporting the Climate Change Camp
  - Itch workshops – 100+ participants
  - 130 applicants, 28 short listed and 10 finalists
  - Mentor support for IT solutions during the camp
  - Start-up support for one of the winners – post competition phases – from idea to prototype





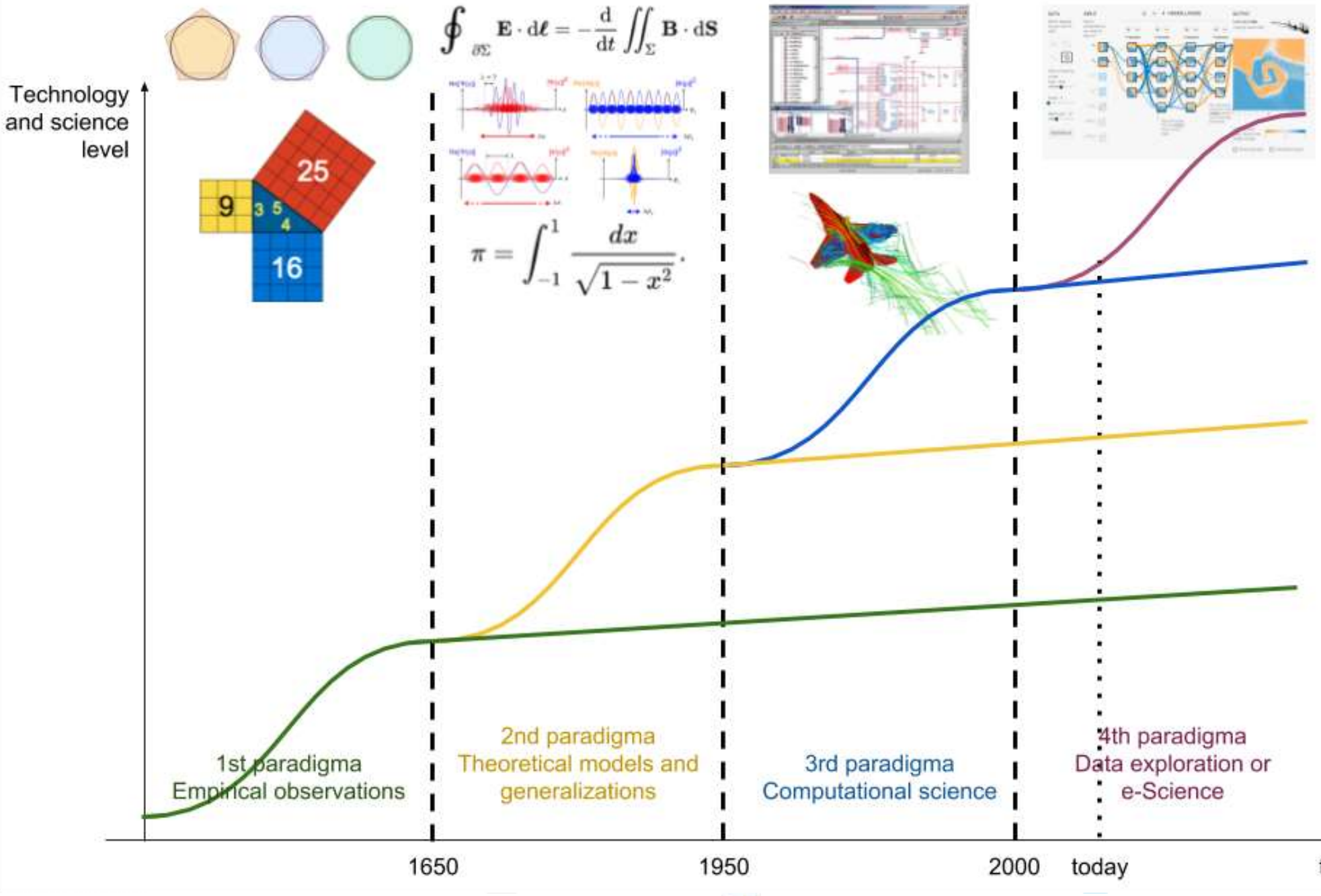
Winter Course in Design Thinking

- **Design Thinking** is a methodology used by designers to solve complex problems, and find desirable solutions for clients.
  A **design** mindset is not problem-focused, it's solution focused and action oriented towards creating a preferred future.



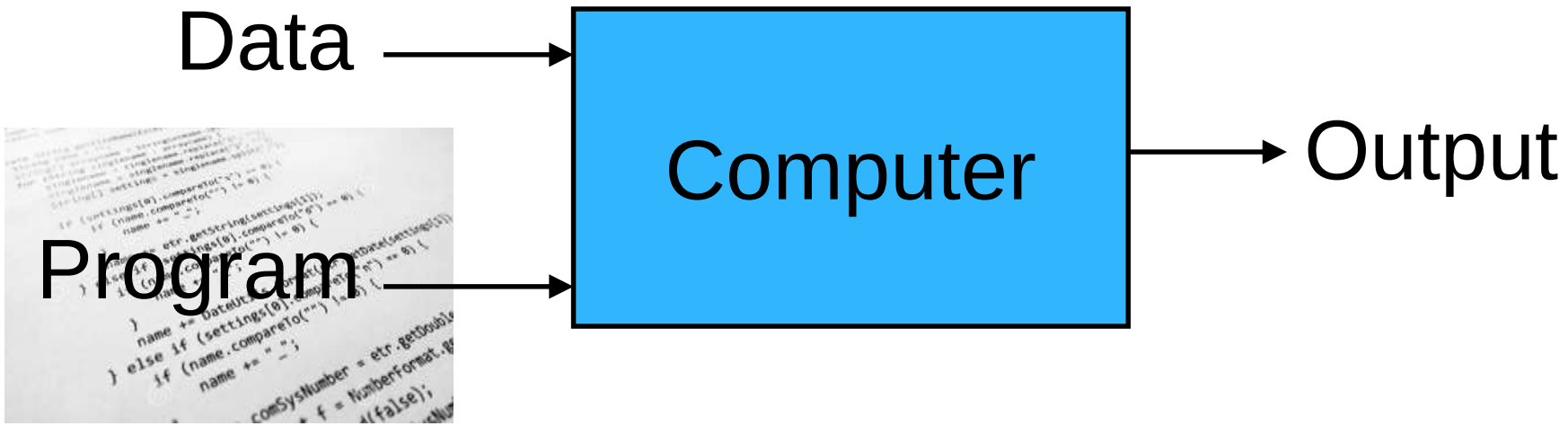


The four paradigms of science: empirical, theoretical, computational, and data-driven

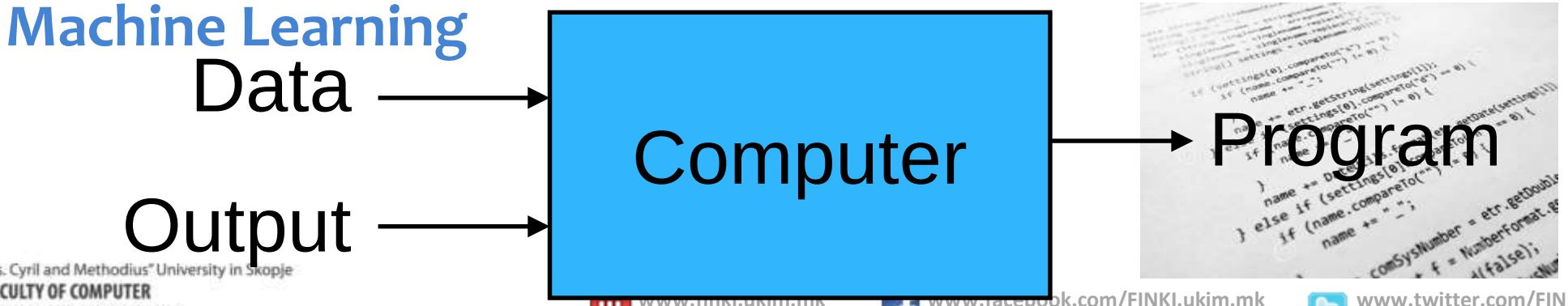


Paradigm shift

Traditional Programming



Machine Learning



Conclusion

- Platform for innovation support
- Training for creativity and innovations support methodologies
- Using new technology to support new solutions.
  - ICT is about creating new communication channels from provider to consumer
  - This new channels are faster, have broader range, and are bi directional (you can have a feedback)
- Transdisciplinary approach: Involvement of different user profiles in problem solving and working jointly to create new innovations.


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