A Systems approach to Sustainability

David Sundaram
d.sundaram@auckland.ac.nz
I am because YOU are.

I am because WE are.
Sustainability
Economic
Environmental
Societal
Cultural
Health
Sustainability
Causal
Interdependent
Integrated
Holistic
Cybernetic
Systems
Society
Supply Chains
Communities
Organisations
Families
Individuals
Individual Sustainability

• Team
  – Claris Chung (PhD candidate)
  – Roman Proskuryakov (Designer and Programmer)
  – Dr. Sarah Henderson (Designer and Programmer)
  – Dr. Max Rohde (co-supervisor)
  – Ronald Chung (M.Com)
  – Professor Nik Dalal OSU
  – David Sundaram (main supervisor)

• Prototypes
  – Lively Suite, Integrated Personal Recommender System

• Publications - 3
Digital Native Well Being

• Team
  – Dr. Shahper Vodanovich (PhD Topic)
  – Professor Michael Myers (co-supervisor)
  – AP Tiru Arthanari (advisor)
  – Dr. Judith McMorland (advisor)
  – David Sundaram (main supervisor)

• Publications - 9
Sustainable Social Shopping

• Team
  – Claris Chung (PhD candidate)
  – Roman Proskuryakov (Designer and Programmer)
  – David Sundaram (main supervisor)

• Prototype
  – Sustainable Social Shopping Systems

• Publications - 4
- Individual/household profiles and histories
- Health, financial and environmental information of products
- Social network data

- Prediction models
- Recommendation models
- Sustainability models
- Behavioral change models
- Decision making models
- Shopping models

- Mathematical algorithms
- Data mining algorithms
- Recommendation algorithms
- System dynamic algorithms

- Sustainability dimensions
- Historical trends
- Comparative analysis
- Cause-effect diagrams
Decision making in online health and financial networks

• Team
  – Valeria Sadovykh (PhD candidate)
  – Professor Michael Myers (co-supervisor)
  – AP Tiru Arthanari (co-supervisor)
  – David Sundaram (main supervisor)

• Publications - 4
DM Phases | HOSN (Netnography)
---|---
Intelligence | Supported
Design | Supported
Choice | Supported through Adviser sharing previous experience
Implementation | Supported through Adviser sharing previous experience
Monitoring | Weak Support

Decision Making Phases | OSN (Survey)
---|---
Intelligence | Supported
Design | Supported
Choice | Supported
Implementation | Identification of resources – Supported. Implementation of an option/alternative/course of action – Not Supported
Monitoring | Not Supported
Fostering sustainable values in the young

• Team
  – Khushbu Tilvawala (PhD candidate)
  – Professor Michael Myers (co-supervisor)
  – David Sundaram (main supervisor)
Sustainable Business Transformation

• Team
  – Dr. Daud Ahmed (Dean’s List Award Winner)
  – Kah Shien Tan (Honours student)
  – David Sundaram (main supervisor)

• Prototypes
  – SMART System – Sustainability Modelling and Reporting System
  – Sustainable Warehouse Modelling and Simulation

• Publications - 10
Adaptive Sustainable Enterprises

• Team
  – Gabrielle Peko (PhD candidate)
  – Professor Michael Myers (co-supervisor)
  – AP Tiru Arthanari (advisor)
  – David Sundaram (main supervisor)

• Publications - 3
Revitalization of Language and Culture

• Team
  – Asfahaan Mirza (PhD student)
  – Professor Michael Myers (co-supervisor)
  – AP Manuka Henare (co-supervisor)
  – David Sundaram (main supervisor)

• Prototype
  – SaveLingo
  – LearnLingo

• Publications – 1
Capture words, phrases, idioms, stories and songs as text, audio, image or video in different dialects.

Curate captured records – approve, reject or modify.

Discover and learn words, phrases, idioms, stories and songs.

Share knowledge through social networks to prompt use of language.
Sustainable Strategic Alliances

• Team
  – Jim Danenberg
  – David Sundaram (main supervisor)

• Publications - 1
A Sustainable Model to Empower the Digitally Excluded

• Team
  – Johnnie Shubert (PhD candidate)
  – Dr. Ami Peiris (main supervisor)
  – David Sundaram (co-supervisor)
Sustainable Supply Chains

• Team
  – Dr. Hendrik Reefke (Dean’s List Award Winner)
  – Dr. Daud Ahmed
  – Professor David Robb (co-supervisor)
  – AP Tиру Arthanari (advisor)
  – David Sundaram (main supervisor)

• Prototype
  – SMART System adapted for Supply Chains

• Publications - 6
Teaching
Imagine a world where technology helps solve the toughest problems facing us today.

You are to identify a problem and come up with an idea as to how we can use technology to help solve the causes of the problem.
Challenge posed to my

INFOSYS 321: Enterprise Systems

INFOSYS 737: Adaptive Enterprise Systems

students
How would you enable XYZ Company/society/yourself to learn to be alive, adaptive, agile, resilient, flexible, transparent and sustainable?

You need to respond procedurally as well as technologically.
Key Stats

• 2 Dean’s List Awards
• 2 courses underpinned by sustainability concepts
• 2 A level conference tracks - HICSS 2016, AMCIS 2016
• 3 PhD’s, 1 M.Com, and 1 Honours completed
• 4 PhD’s ongoing
• 8 System Prototypes
• 11 Projects
• 23 Team Members
• 41 publications (A* journals to A conferences)
• >$110,000 obtained in funding