

Great Expectations: Design Teaching, Research & Enterprise

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Brian Parkinson and Darren Southee

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Great Expectations: Design Teaching, Research & Enterprise

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Table of Contents

xvii **Foreword**

xxiv **Design Society**

xxv **Institution of Engineering Designers**

xxvii **Keynote: Sebastian Conran – The Importance of Design**

xxvix **Keynote: Professor Dale Russell – One Step Beyond: An open culture of transcending boundaries towards innovation**

Chapter 1 – Exploring Design Education

2 Science Informed Design: Involving the Physical and Natural Sciences
John Richard McCardle

8 Are we asking the right Questions? Rethinking Post – Graduate Design Education towards Sustainable visions for the Future
Clare Brass and Francesco Mazarella

14 Design Management
Colin Ledsome

19 Movement in Aesthetic Form Creation
Bente Dahl Thomsen

25 Rules and Complex Thinking in Design Education
Tore Gulden and Vibeke Sjøvoll

Chapter 2 – Collaboration

- 32 Collaborating on a Case-Based Course in Quality Management and Control
Lyndia Stacey, Ada Barlatt and Steve Lambert
- 38 Visual Communication of Design Principles in a Complex Kinetic Construction
Gunnar H Gundersen and Arild Berg
- 44 University – Industry Experiences. Case of a University-Industry-Administration agreement
Joaquim Lloveras
- 50 Interest in the Commercial? Using commercial Design Projects in Pedagogy
James Meadwell, David Terris and Peter Ford
- 56 Principles Guiding Teams in new Product Development Projects
Moritz Mussnug, Stefan Boes and Mirko Meboldt
- 62 What we learn from Experts about Enquiry when we engage in Problem Solving
Grietjie Haupt
- 69 Problem Framing and Design Opportunities
Carolina Gill, Blaine Lilly and Paul Reeder
- 75 Towards the Chequered Flag: A Collaborative Cross Level Engineering Appreciation Challenge for BSc Product Design Students
Matthew Alan Watkins, Alan Crisp and Luke Harmer
- 81 Increasing the Entrepreneurial Success of Design School spin-outs
Niall G Deloughry
- 87 An Interdisciplinary approach to embedding the global dimension into Engineering Design: Empathy, Engagement and Creativity
Elizabeth Hauke, Katie Cresswell-Maynard and Daniel Craddock
- 93 How to Incorporate Sustainable Design in the International European Project Semester Programme: Insights from Practice
Elli Verhulst, Sarah Rohaert and Karine Van Doorsselaer

- 99 Using Engineering Design Tools in Multidisciplinary Distributed Student Teams
James Mamo, Philip Farrugia, Jonathan Borg, Andrew Wodehouse, Hilary Grierson and Ahmed Kovacevic
- 105 Why Internationalisation of Design Education Benefits UK Students
Clive David Hilton

Chapter 3 – Learning Environments

- 112 DesignLab, making space for doing Design as a Process
Wouter Eggink
- 118 A Reflection on the Producing, Delivering and Re-Using ‘Assets’ for MOOC’S
Dan Trowsdale and Gerard Duff
- 124 Multiple Media Stimulus in Product Design Teaching: The Importance of Rich Media Environment
Harald Skulberg
- 130 Conditions for the Promotion and Development of Creative Industries within Higher Education Institutions
Maria Cristina Hernandez, Maria Paola Podesta and Beatriz Eugenia Bedoya
- 136 Utilizing Smartphones to improve the Effectiveness of University Students’ Collaborative Work
Xiaolong Wu, Young Mi Choi and Clay Fenlason

Chapter 4 – Technology

- 144 Design Process and Conscious Problem Solving Through Computer Aided Design Education
Nenad Pavel and Mikael Omlid
- 150 Visualizing Workplace Design
Anders Hakansson, Magnus Stenberg and John Daniel Ohrling
- 156 Evaluation of Flipped Teaching Methods for Computer Aided Design
Jeff Barrie

- 162 Teaching Engineering Drawing in a Technology Changing Environment
Joachim Langenbach, Martina Wachter, Armin Lohrengel and Norbert Muller
- 168 Understanding and Creating 3D Forms Using Familiar Objects
Mithra Zahedi and Zoubeir Azouz

Chapter 5 – Pedagogy

- 176 Generative Prototype Iteration in the front end of the Design Process
David Liam McKenzie
- 182 Good Benefactors Managing Design Expectations
Vicki Thomas
- 188 Developments in Design Pedagogy
Michael John Tovey
- 194 Turning Interaction design Students into Co-Researchers: How we tried this and somewhat failed
Oskar Rexfelt, Pontus Wallgren and Alexandros Nikitas
- 200 Educating Design Professionals in the 21st Century
Fang Bin Guo and Jamie Finlay

Chapter 6 – - Ethics

- 208 Questions of Value – Ethics in the Design Curriculum
Viktor Hiort af Ornas and Martina Keitsch
- 214 Slow Fashion in the Sports Apparel Industry
Marte Soderlund and Arild Berg
- 220 Well Being as a Criteria for Product Design
Julian Lindley and Richard Adams
- 226 User Involvement in Design of Health Care Services
Ann Kristin Forshaug and Johannes B Sigurjonsson
- 232 The purpose of Industrial Design Development – Dilemma of Ethical & Social Aspects of Design Bachelor and Master Projects in Latvia
Aija Freimane

Chapter 7 – Matrices and Assessment

- 240 Introducing Research in Architectural Design Teaching as a Means to Enhance the Design Learning Process
Karel Vandenhende
- 246 RP or not RP that is the Co-Creation Question
Mehran Koohgilani, John Powell and Gary Underwood
- 252 An Investigation of what Feedback Students Recognise as Feedback
Tania Maxine Humphries-Smith and Clive Hunt
- 258 Is Video Feedback in Higher Education Worth a Byte?
Anders Berglund, Phillip Tretten and Per Hogstrom

Chapter 8 – Pedagogical Practice

- 266 Organizational Identity Construal through Design Process
Nenad Pavel and Einar Stoltenberg
- 272 From Natures Prototypes to Natural Prototyping
Fraser Bruce and Seaton Baxter
- 278 Organic, Bionics & Blob Design – Conceptual and Methodological Clarification
Bente Dahl Thomsen
- 284 Boundary Objects as Means for Knowledge Generation in Design Education
Martina Maria Keitsch

Chapter 9 – Social Issues

- 292 Critical Design for Discussion about Public Space
Sunniva Munster and Arild Berg
- 298 Designing for user experience in Nordic Skiing
Hakon Stuler and Arild Berg
- 304 Using Social Engagement to Inspire Design Learning
Ian de Vere and Robert Phillips

- 310 Social Participatory Teaching and Learning – Lessons from a Partnership of Industrial Designers and local Artisans
Juan Carlos Briede Westermeyer, Marcela Cabello Mora, Pablo Olivera Morales, Marcela Mora Donoso and Marcela Perez Porquet

Chapter 10 – Bachelors, Masters and PhD in Design Engineering

- 318 What Design Students think are Hot Topics; An Analysis of 20+ Years of Industrial Design Master Projects
Casper Boks and Bjorn Baggerud
- 324 Introducing Industrial Design to the Students of Renaissance Engineering Programme: A Personal Experience
Peer Mohudeen Sathikh
- 330 Reading Assistant: Hands-On Experience with Systematic Design
Khalid Hamarsheh, Mohammed Al Hashimi and Zainab Al Hashimi
- 336 Writing a PhD in Design and Knowledge Transfer – Interdisciplinary Design Education
Marina-Elena Wachs

Chapter 11 – Design Teaching Methods

- 344 Sand Casting on the Beach – Introducing Traditional Making Skills, Materials and Process through Play and Experimentation
Einar Stoltenberg and Richard Firth
- 351 Industrial Design: A Profession between Engineering and Applied Art
Martina Maria Keitsch and Eivind Prestholt
- 357 How Design Reasoning Perspectives Promotes Prospective Ergonomics within the Teaching of Strategic Design
Andre Liem
- 363 What are Design and Technology for?
Darren John Southee

- 369 Unconscious Interaction between Human Cognition and Behaviour in Everyday Product: A Study of Product Form Entities through Freehand Sketching Using Design Syntactic Analysis
Muhammad Jameel Mohamed Kamil and Shahrman Zainal Abidin
- 375 Design of Pedagogic Tools for Teaching Materials in Product Design Engineering
Luis Fernando Patino Santa
- 381 Exploring Lasting User- product relationships, meaning and materiality
Clare Ruth Green
- 387 Old hopes through new Schemes: A Path towards Innovation
Jorge Andres Caro Del Castillo Hernandez
- 393 Design Students at the Crossroads of Adaption and Self-will
Julia Albrecht, Christoph Richter, Elisa Ruhl and Heidrun Allert

Chapter 12 – Project Based Learning

- 400 Make your bed and lie in it! Learning to take the Consequences of Design Decisions in an Engineering Design Project
Markus VoB, Hulusi Bozkurt and Thorsten Sauer
- 406 Designing for Multisensorial Interactive Product Experiences
Bahar Sener and Owain Pedgley
- 412 An Energy Cube Project for Teaching Engineering Design Process
C Fionnuala Farrell, Shannon Massie Chance and Michael O'Flaherty
- 418 Supporting Validation Activities and Self-reflection Processes in Interdisciplinary Design Teams
Sven Matthiesen, Sebastian Schmidt, Simon Klingler, Tobias Pinner, Matthias Eisenmann, Julian Ludwig, Soeren Hohmann and Albert Albers
- 424 Surgical Appliance Design through Student Co-Creation at PAL-Week
Nigel Patrick Garland, Zulfiqar Ahmad Khan and Peter O'Kane

Chapter 13 – Innovation

- 432 Sculptural Cubism in Product Design: Using Design History as a Creative Tool
Augustine Frimpong Acheampong and Arild Berg
- 438 Idea Generation: Is Ill-Defined Better for Innovation?
Christian Tollestrup and Linda Nhu Laursen
- 444 Innovation and Academia – IPR Ownership in the UK
Matthias Hillner, Mandy Haberman and Professor Ruth Soetendorp
- 450 Developing innovation in Higher Education: the Catalytic effect of conference attendance
Chris Dowlen
- 456 Technology and Form – Design rights Versus Patents
Matthias Hillner

Chapter 14 – Enterprise

- 462 Future Industrial Design Specialisations: A Centre for High Performance Composites
Stephen Trathen, Eddi Pianca, Carlos Montana-Hoyos and Bill Shelley
- 468 Developing Research informed Product Design resources to support teaching and learning in the use of Sketches, Drawings, Models and Prototypes
Mark Evans
- 474 Exploring the potential of Enquiry-Based Learning in a Process Modelling Course
Hany Hassanin and Khamis Essa
- 480 Prototyping Public Design Experiments as Research – The project of KIC Square in Shanghai
Duan Wu and Dongying Hu
- 487 On the appropriateness of appropriate judgments in Design Evaluation
Cyriel Diels and Aysar Ghassan

Chapter 15 – Problem Based Learning

- 494 Improving Skills in Product Design: Exploring Solution Space and the Impact of Applied Mental Scaling
Harald Skulberg
- 500 The Problem Revisited: Teaching the PBL Approach to Design Students
Nis Ovesen
- 506 Project Time Boxing and Milestones as Drivers for Open Design Projects
Christian Tollestrup
- 512 Learning-By-Watching as Concept and as a Reason to choose Professional Higher Design Education
James Beate Reitan
- 518 SYSKIT 2.0 – Implementation of a Sysml Teaching Approach and Observations on Systems Modelling by Mechatronic Teams
Sven Matthiesen, Sebastian Schmidt and Georg Moeser
- 524 Choosing an Appropriate Design Process Bridging the Knowledge gap between Professions and Paradigms Using Von Hippel’s end user Theorem – A Case Study
Martin Möhl and Jesper Grode
- 530 The Materiality of Colour in Design Education: Functional Codes and Cultural Context
Arild Berg
- 536 Manage. Create. Play. Practices for teaching design project management through the creation of board games.
Mauricio Moreira E Silva Bernardes, Geisa Gaiger De Oliveira

Chapter 16 – Learning Paradigm

- 544 A Preliminary Comparison of Desk and Panel CRIT Settings in the Design Studio
Patrick Pradel, Xu Sun, Bruno Oro and Wang Nan
- 550 Intensives and Experts: The Deer Park Studio Experience
Rob Eales, Soumitri Varadarajan Parag Anand and Aditi Singh

- 556 Are Design-led Innovation approaches applicable to SME's?
Melehat Nul Gulari and Chris Fremantle
- 562 Raising our Game: Creating new Learning experiences
with Research Collaborations
Jennifer Loy, Stephen Reay and David White

Chapter 17 – Research

- 570 Student Design Entrepreneurship, from Concept to retail
in Ninety Days
Richard Anthony Elaver
- 576 Kickstarter's Role in Industrial Design Education
Bryan Howell, David Morgan, Camilla Stark and Aaron Puglisi
- 582 Enhancing Communication Skills through Student and
Enterprise Interaction
Einar Stoltenberg
- 588 The Sharing Economy and Design
Joseph Drew Smith, David Morgan and Bryan Howell

Chapter 18 – Design Methods

- 594 The ideality “What” Model for Product Design
*Alon Weiss, Iko Avital, Yael Helfman Cohen, Amarendra Kumar Das
and Gedalya Mazor*
- 600 Gathering Structured Reflection in the Furniture Business by
trend Mapping
Andrea Erika Frei and Kaare Eriksen
- 606 Sketching as a Thinking Process
Tatjana Leblanc
- 612 How Design is taught? A Survey of Approaches, Models & Methods
Jorge Maya and Elena Gomez

Chapter 19 – Creativity

- 620 Creative Reductionism: How Decreasing Levels of Information can Stimulate Designers Imagination
Shiro Inoue, Paul Rodgers, Andy Tennant and Nick Spencer
- 626 Methods for Ideation: Reviewing Early Phase Concept Generation among Industrial Design Engineer Students
Peter Conradie, Ralph Nafzger, Cies Vanneste, Lieven de Marez and Jelle Saldien
- 632 The effect of Profiling on Team Dynamics and Creativity
Steve Cayzer
- 637 A Research Based on Signage Design Experiment to Test Users' Engagement
Duan Wu and Ran Xu

Chapter 20 – Technology and Knowledge Transfer

- 644 Augmented Reality for Enhanced Student Industrial Design Presentations
Basak Topal and Bahar Sener
- 650 Experiences of Embedding Blended Physical and Digital making into Design Education
Barney Townsend and Andrew Forkes
- 656 Determination of Characteristics and Attributes that allow the Efficiency of Technological Tools for the Creative Stage of Design Process
Alejandro Acuna
- 662 Printed Electronics, Product Design and the Education of Future Industrial Designers?
Nicola Emily York, Darren John Southee and Mark Evans

Foreword

Great Expectations: Design Teaching, Research & Enterprise

The 17th International Conference on Engineering and Product Design Education (E&PDE) was held at Loughborough Design School (LDS), Loughborough University, UK on the 3rd and 4th of September 2015.

The conference was hosted by LDS in close collaboration with the Design Education Special Interest Group (DESIG) of the Design Society, and the Institution of Engineering Designers (IED).

The E&PDE conference series began in 1979 in the UK. In that year I was a member of the first cohort of students in our school to study GCE 'O' level Computer Science. We were taught by our mathematics teacher (who reportedly was a week or two ahead of us in the syllabus) and we used five hole punched paper tape to input to our computer. The home computer was yet to arrive on the scene, with the Sinclair ZX80 under development at The Mill in St. Ives, Cambs (released in 1980 at £99.95, UK).

Product Design, in 2015, has many fundamental differences to Product Design in 1979 and, while much of the heart of engineering theory existed at that time, Engineering Design (and practice) in 2015 has also undergone multiple transformations over the thirty six year period.

On Wednesday 8th July 2015, I attended an event at St James's Palace, London where the Duke of Edinburgh, a patron of the Institute for Engineering Designers (IED), hosted a celebration of the 70 year anniversary of the IED, he also conferred the newly established status of Chartered Technological Product Designer (CTPD) upon the first five candidates to meet the requirements.

Chartered Engineer status (UK), on the other hand, followed the establishment of the Engineering Council, gaining a Royal Charter on 27 November 1981 and offering verified recognition of professional competencies through training and monitored professional practice experience. Applications for registrations have reportedly increased in recent years suggesting that industry acknowledges and rewards those who have achieved this status.

Engineering and Product Design then have essentially been through evolution and revolution in the intervening years since the E&PDE conference series began.

The programme committee agreed, “Great Expectations: Design Teaching, Research & Enterprise”, as the headline theme, captured some prevailing perceptions associated with Higher Education Institutes (HEIs) involved in Engineering and Product Design Education. HEIs, it appears, are required to output humans able to meet industry, government and societal demands for productivity, innovation, happiness and lifelong adaptability.

Our keynote speaker, Sebastian Conran, brings wisdom gained in Industry at Sebastian Conran Associates, to present “The Importance of Design” arguing that there is a clear business-case for the use of rigorous Design Process and Creative Thinking tools in early stage innovation. Such an approach, he suggests, can be even more effective for industry.

Professor Dale Russell, also a keynote speaker, reflects upon her experiences in Design Education at The Royal College of Art and Central Saint Martins UAL to present, “One Step Beyond: An Open Culture of Transcending Boundaries Towards Innovation”, looking back at the open culture of discourse and experimentation in the late 1980s, through to a transdisciplinary fusion of research investigation and experimentation in pedagogical and commercial design innovation to initiate insight and understandings for people-centred design as we shape our future.

Globalisation, the process of international integration arising from interchanges of world views, products and ideas, previously focused on the economic perspective only, also projects a very different picture in 2015 to that in 1979. It is pleasing to see representatives from more than 30 countries at this year’s E&PDE conference. This allowed the committee to construct a programme with major streams including:

- Promoting Creativity and Innovation in Design & Engineering
- Ethics and Social Issues
- Benefits of Collaboration in Design & Engineering
- International Collaboration
- Project/Problem Based Learning
- Bachelors, Masters and PhDs in Design & Engineering
- Design & Engineering Metrics & Assessment
- Informing Design & Engineering Pedagogy with Research & Enterprise
- Technology Integration, Application & Knowledge Transfer
- Design & Engineering Pedagogical Practice

The quality papers submitted and accepted under these streams offer an opportunity to frame, provoke and progress toward an Engineering and Product Design Education culture fit for purpose at the present time and into the future.

This 2015 edition of the E&PDE conference was made possible through the commitment and efforts of many people. Special thanks go to Judith Grace, Ahmed Kovacevic, Brian Parkinson, Erik Bohemia and Andrew Weeks for their excellent wisdom in organizing this conference. Nadine Pearce and Charlotte Whitehead from the Institution of Engineering Designers who have carried out sterling work throughout.

We would sincerely like to thank all the members of the international academic review board.

On behalf of the conference programme committee:

Dr. Darren Southee
Programme Director Product Design & Technology (BSc)
Loughborough Design School
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The Design Society is an international non-governmental, non-profit making organisation whose members share a common interest in design. It strives to contribute to a broad and established understanding of all aspects of design and to promote the use of results and knowledge for the good of humanity.

The Design Society was founded in 2000, taking on the previous activities and responsibilities of the Workshop Design Konstruktion (WDK) Society, especially the organisation of the International Conference on Engineering Design (ICED) series of conferences, which had been running since 1981. Since 2000 the Society has organised ICED conferences in Stockholm, Melbourne, Paris, Stanford, Copenhagen, Seoul and Milan. It has also expanded with members from forty countries and with further very popular events such as the Engineering and Product Design Education conferences and the International Conference on Design Creativity among many other activities. The Society is very active in publishing papers and proceedings on design topics, and it has a developing portfolio of other design resources available to members including a repository of theses and collaborative agreements with a number of design research journals.

The Design Society concentrates on activities that transcend national boundaries, and, where possible, will seek to complement national activities. The objects of the Society are to promote the development and promulgation of understanding of all aspects of design across all disciplines by:

- Creating and evolving a formal body of knowledge about design;
- Actively supporting and improving design research, practice, management and education
- Promoting co-operation between those in research, practice, management and education
- Promoting publications and their dissemination;
- Organising international and national conferences and workshops
- Establishing Special Interest Groups and other specialist activities;
- Co-operating with other bodies with complementary areas of interest

The Design Society is a charitable body, registered in Scotland, number SC031694. Registered Company Number: SC401016.

The Design Society is open to new members. www.designsociety.org.



support
inspire
achieve

Established in 1945, Incorporated by Royal Charter in 2012, the Institution of Engineering Designers is the premier organisation in the UK to represent those working in the many fields of engineering and product design.

Our members enjoy a range of benefits, including advice on professional codes of conduct, a job board, regular newsletters to keep members up to date with relevant developments and events and a helpful legal advice service. We host regular events which offer our members the chance to network with other professionals and members receive the Institution's bi monthly journal – Engineering Designer.

We are committed to encouraging CPD for all our members, and support ongoing training and skills development.

We are licensed by the Engineering Council to assess candidates wishing to join the EC's Register of Professional Engineers and Technicians and we also accredit academic and training courses, both for membership of the Institution and registration with the EC. Those members who achieve the appropriate academic and competence standards receive Chartered Engineer, Incorporated Engineer or Engineering Technician status.

We are also a licensed body of the Society for the Environment and are able to register suitably qualified and competent members as Chartered Environmentalists (CEnv).

2015 has seen the launch of a new Chartership for Product Designers. CTPD (Chartered Technological Product Designer) is on-a-par with all other Chartered registrations and exists to provide professional recognition and standing to those suitably qualified and competent persons working in Product Design.

We welcome members from any organisation that has a design function and employs design engineers and we have many academic teaching staff in membership. The first step to becoming a member is to register as an Affiliate, and find out more about becoming a member of the IED at <http://www.ied.org.uk>

The Importance of Design

Sebastian Conran, Sebastian Conran Associates

Summary of Keynote

There is a clear business-case for using rigorous Design Process and Creative Thinking tools in early stage innovation can be even more effective for industry for multiple reasons: more innovative & appealing products, simpler manufacturing, quicker responsiveness, and shorter product-development timescales. All of which leads to greater product resilience, customer satisfaction, less aftersales resource and ultimately better profitability.

Although its meaning has become quite nebulous the word Design derives from Latin designare; scheme, plan, mark out, devise, choose, designate, appoint. The designer is literally "one who schemes" and creates the vision for others to follow.

Traditionally Britain has a culture that believes in amateurism and that anyone 'creative' could design something nice. There is often a tendency to view design as a sort of marketing tool used in the selling process to package and communicate the product offer. However in a contemporary world - whether Porsche, Dyson or Apple - if aiming to offer globally outstanding product then excellent thoughtful design is essential to achieve success.

Professional design exists within a wide bandwidth of disciplines including: industrial, architecture, interface, product-styling, graphic and fashion. Designers tend to specialize in specific fields such as: automotive, built environment, luxury, strategic, branding, or web design. For example industrial designers are trained and experienced in product innovation and industrial fabrication. They are skilled at collaborating successfully within technical teams throughout the product development process; they tend to think rigorously and in the long term. However with buying seasons twice a year the more intuitive fashion designer is obliged to follow an entirely different schedule.

The choice of which discipline is appropriate for a specific task, and when & where in the innovation process is best applied significantly impact on the outcome of a project. What is the scale and impact of the challenge – do you need a nurse or a neurosurgeon, or perhaps a more of a generalized practitioner? Whatever the choice of designer, both talent and experience can count for a lot and some are better than others.

The one thing that all designers should have in common is that they employ their creativity and experience to create the maximum Value (as in perception of fair exchange), whilst using available resources as efficiently as possible.

Another way of looking at it is that value consists of brand, design and quality, divided by cost.

Key Message:

Outstanding design can leverage excellence and success from your business; do not leave it too late, design is not just the marketing graphics & logos, wrappers & websites, posters & packaging – although it is part of it, this comes towards the end of the process. Design needs to be the first thought as well as the last.

One Step Beyond: An Open Culture of Transcending Boundaries Towards Innovation

Professor Dale Russell, Royal College of Art & Central Saint Martins UAL & Russell Studio

Summary of Keynote

In the late 80s an open culture of discourse and experimentation took place by default. Today this same open culture is required that inspires the willingness to transcend boundaries while acknowledging excellence of innovation and rigor demanded within the fusion of engineering, scientific and design innovation.

Left-field visioning in a corporate culture is reliant on knowledge flow within an innovation ecosystem without boundaries. Forming a synthesis addressing society, user-centricity and technology that rely upon delicate dialogue between scholastic research and commercial innovation practice.

Transition in change through strategic frameworks for disruptive iteration provoke impact of meaningful exchange created by practitioner and educator as protagonist in the provision of peripatetic practice on an international platform between academia and corporations. As we progressed through landline to cloud, numerous questions and observations are provoked and include: Social responsibility? Need for permanency? What is the role of artefact? Material metamorphosis? Positioning of the hacker?

As advocate for the integration of the intuitive and the pragmatic within tangible and intangible product development, this has led to progressing a transdisciplinary fusion of research investigation and experimentation in pedagogical and commercial design innovation through the synthesis of foresight, research and practice to initiate insight and understandings for people-centred design as we shape our future.

