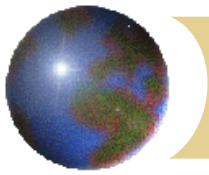


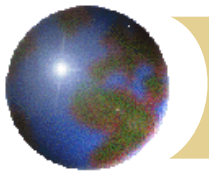
Building Western Australia's Design Infrastructure for Innovation

Dr. Terence Love



Design and Innovation

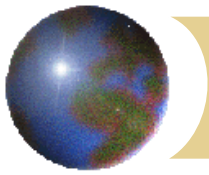
- ✚ This presentation points to serious problems in Australian Innovation programs due to lack of an adequate Australian design infrastructure.
- ✚ Contents:
 - ✚ Overview of design infrastructure and innovation
 - ✚ Problems of weak design infrastructure
 - ✚ Australia's design infrastructure
 - ✚ Suggestions for change



Design - definitions

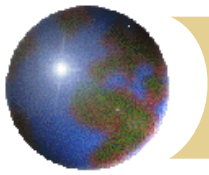
To design is to '[devise] courses of action aimed at changing existing situations into preferred ones'
(Simon, H.(1982) *The Sciences of the Artificial* MIT Press, Cambridge, MA).

A 'design' is a specification for making or doing something.



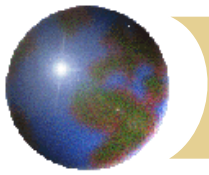
Information about designers

- ✚ Designers create designs for manufacturing products, and delivering services
- ✚ There are over two hundred different disciplines in which professional designers practice
- ✚ Designers make choices that define most of the likely success & profitability of products and services early in design processes
- ✚ Most good designers are trained to post-graduate level – often in several disciplines.
- ✚ Design research focuses on improving how designing is undertaken (contrasts with e.g. engineering research).

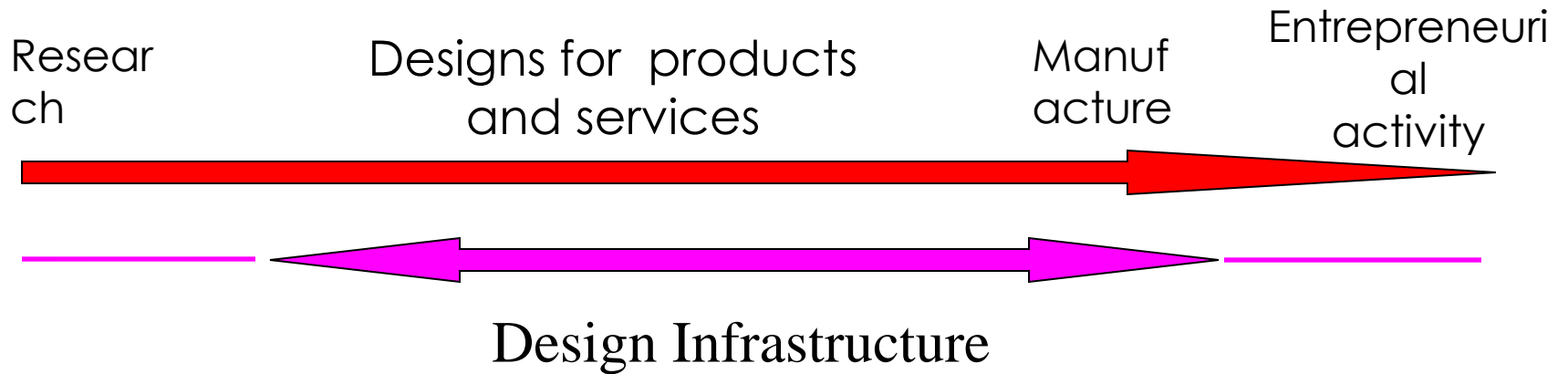


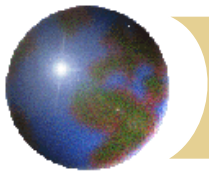
Designing and stakeholders

- ✿ Designers work with all stakeholders in developing designs for new products & services. These include:
 - ✦ Entrepreneurs
 - ✦ Marketing experts
 - ✦ Manufacturing experts
 - ✦ Materials experts
 - ✦ Business process planners
 - ✦ Users
 - ✦ Researchers
 - ✦ Other designers



Elements of Successful Innovation



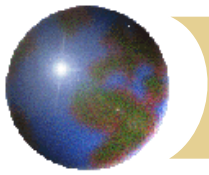


Design Infrastructure

Design infrastructure is:

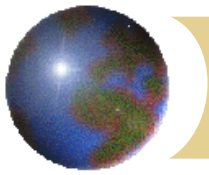
- ❑ Designers – sufficient numbers with the right training
- ❑ Product and other design businesses
- ❑ Design education programs
- ❑ Professional design organizations
- ❑ Government bodies whose focus is design infrastructure
- ❑ Design research programs
- ❑ Government design policies

Without adequate design infrastructure, new Australian scientific knowledge will not easily emerge in practical applications.



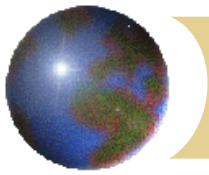
Benefits of Strong Design Infrastructure

- ✚ Strong national design infrastructure increases national economic and social benefits by improving efficiency and effectiveness of design processes
- ✚ Allows increased complexity in the designs for products and services
- ✚ Shortens time to market
- ✚ Reduces downstream costs shaped by early design decisions
- ✚ Minimises risks of product and service failures.



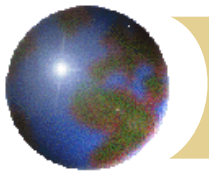
Problems of Weak Design Infrastructure

- ❖ Innovation programs are compromised by lack of adequate design processes leading to reduced quantity and quality of outcomes
- ❖ Conversion of new knowledge into commercially and socially beneficial artefacts, systems and services is delayed
- ❖ Financial viability of innovation initiatives is reduced
- ❖ The benefits for national economic and social development from investment in innovation and research are reduced.

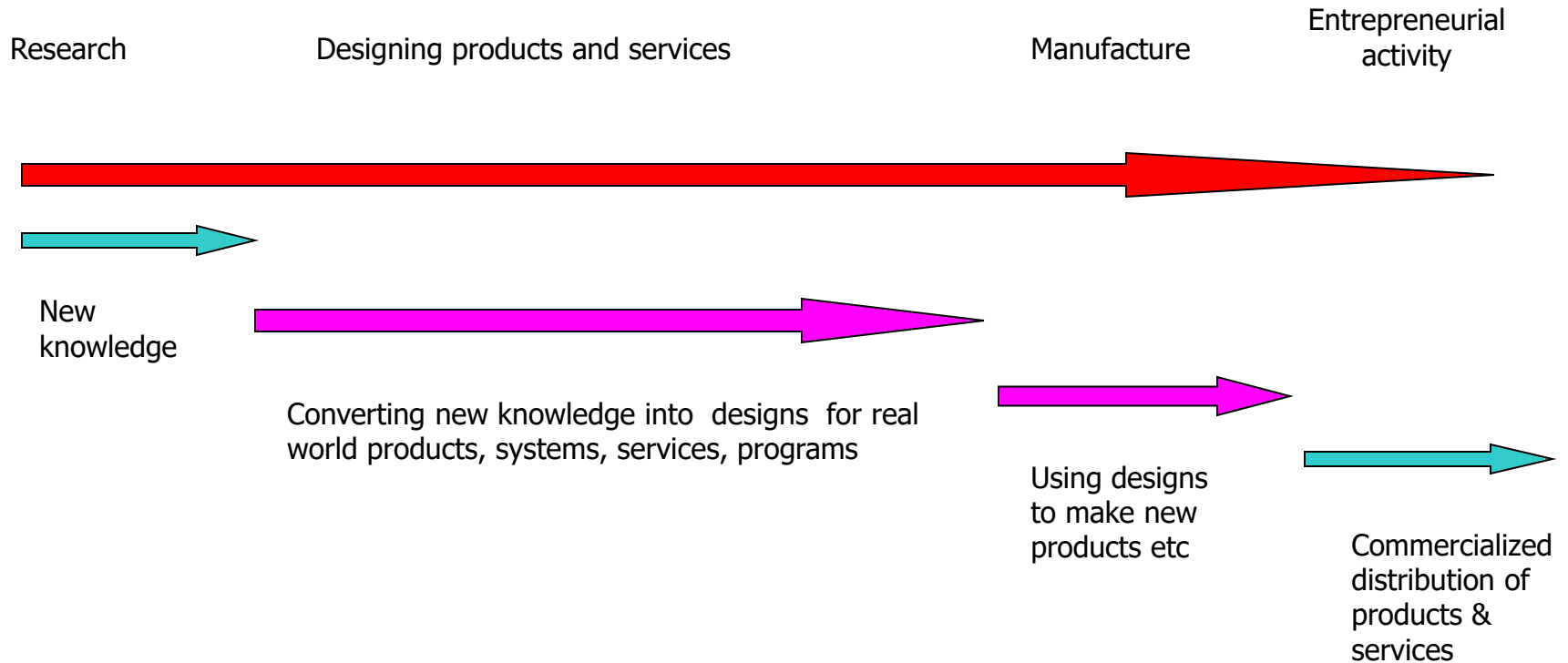


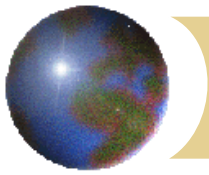
Design Infrastructure – key points

- ✚ Building design infrastructure is important for Australia's national development.
- ✚ Innovation programs are severely compromised where there is weakness in national design infrastructure
- ✚ Building design infrastructure directly improves innovation outcomes.

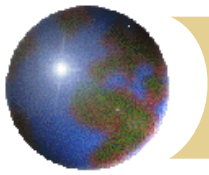


Elements of Successful Innovation

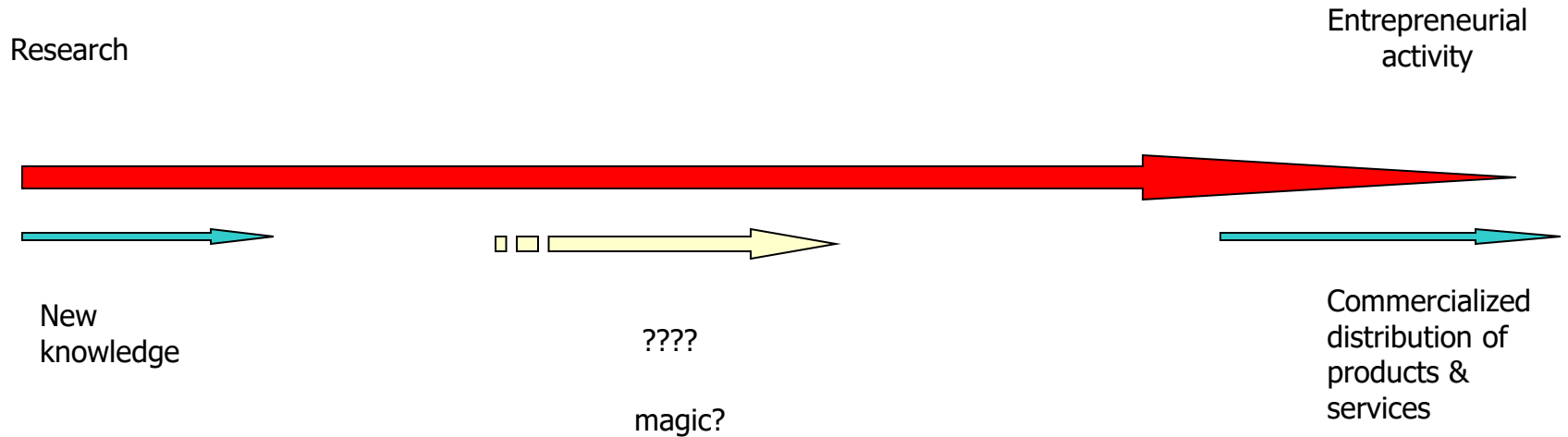


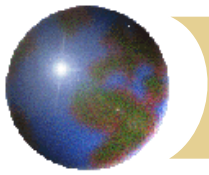


Australian Design Infrastructure



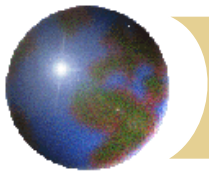
Australian Innovation Model





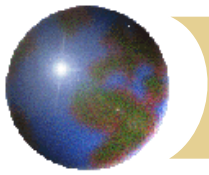
Current Australian Innovation Support Approach

- ✚ Assumes that researchers have all the skills of professional designers
- ✚ Assumes that the outcomes of research are products almost ready for market
- ✚ Assumes that business entrepreneurs have all the skills of professional designers



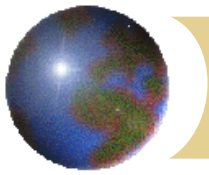
Current Australian Innovation Funding

- ⊕ More money for researchers
- ⊕ More money for entrepreneurs
- ⊕ No money to support the individuals, organizations and processes to design products more efficiently and effectively



Statistics

- ✚ No tertiary product design education in Western Australia
- ✚ Negligible funding for design research in Australia. This contrasts with the tens of millions of dollars invested by countries such as the US and the UK.
- ✚ No government body dedicated to supporting design processes (Countries such as UK, US, Finland have several)
- ✚ Compared to other developed countries the level of design infrastructure appears to be unusually low
- ✚ No formal national design policy
- ✚ Neglect of design processes in Australian innovation literature



Building a Strong Design Infrastructure for WA

First steps:

- ✚ Commit support from government
- ✚ Establish small working group
- ✚ Commission report from Dr Terence Love & co-researchers
- ✚ Identify members of broad interest group
- ✚ Disseminate proposals from working group to broad interest group for comment – use an 'innovation and design infrastructure' website
- ✚ Feedback to government agencies and cabinet