

# The Future of Digital Product Design

A presentation for BayDUX  
December 8, 2004

Dirk Knemeyer  
Involution Studios LLC

- Introductions
  - :: Digital Products
  - :: User Experience Design
  - :: Trends
  - :: Digital Product Design and You

# About dk



- Founding Principal - Involution Studios LLC
  - A digital product design company
- Leadership position with various industry groups
  - Board of Directors, International Institute for Information Design
  - Board of Directors, AIGA Center for Brand Experience
  - Executive Council, User Experience Network (UXnet)
- Frequent writer, give seminars and presentations around the world

# About dk



- College years - researcher and media personality (MA in popular culture; BA in English)
- After college - adjunct professor (humanities, English, popular culture)
- Marketing - project manager -> account executive -> marketing strategist -> management consultant
- Design - writer -> information architect -> visual designer -> usability analyst -> design director
- Digital product design - business manager -> consultant and designer

# About Involution Studios



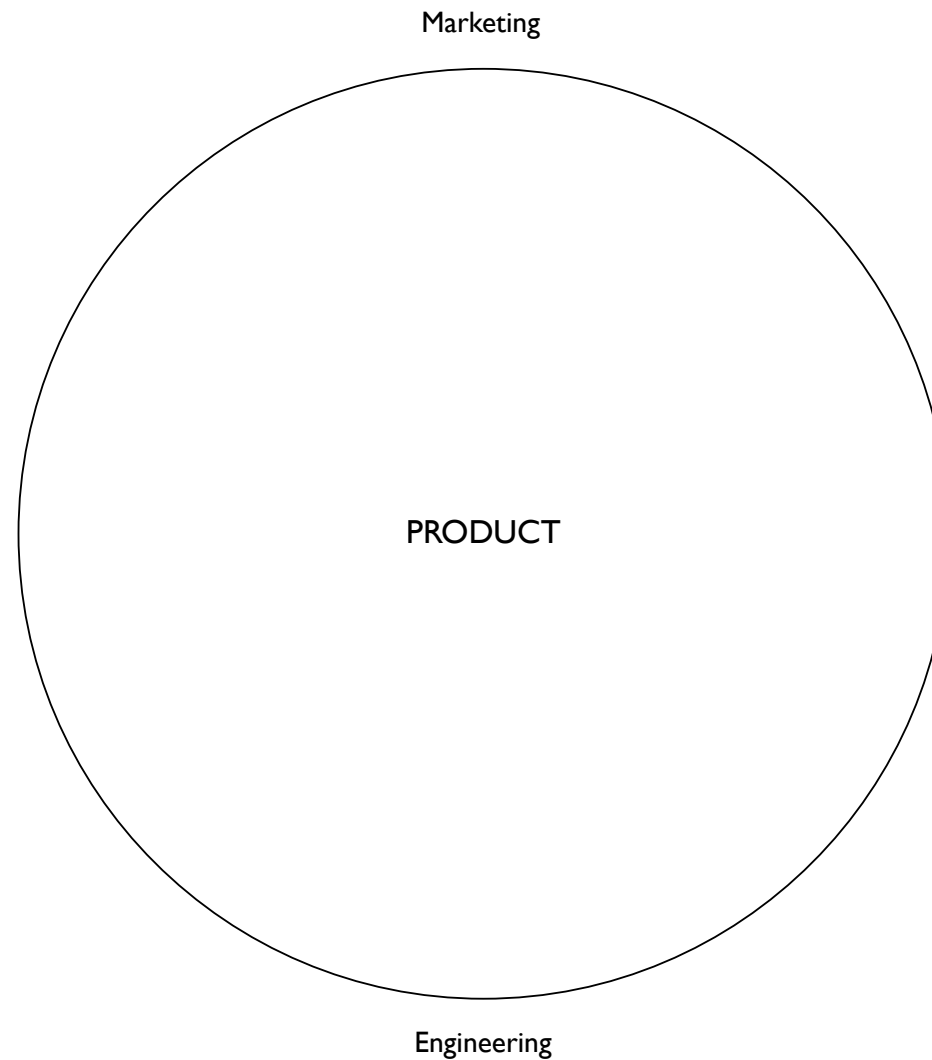
- Help technology start-ups prototype, position, and build their products
- Provide consultation and design/re-design for companies of all size
- Deliver training and seminar experiences in corporate, organizational, and public settings
- Invent, design, and bring our own digital products to market
- Client list includes Stanford Graduate School of Business, Yobon Inc., Memory Matrix

Big goals...

*“To measurably increase  
the happiness and well-being  
of the human species.”*

- ∴ Introductions
- **Digital Products**
- ∴ User Experience Design
- ∴ Trends
- ∴ Digital Product Design and You

# Anatomy of a Product





# Key Definition



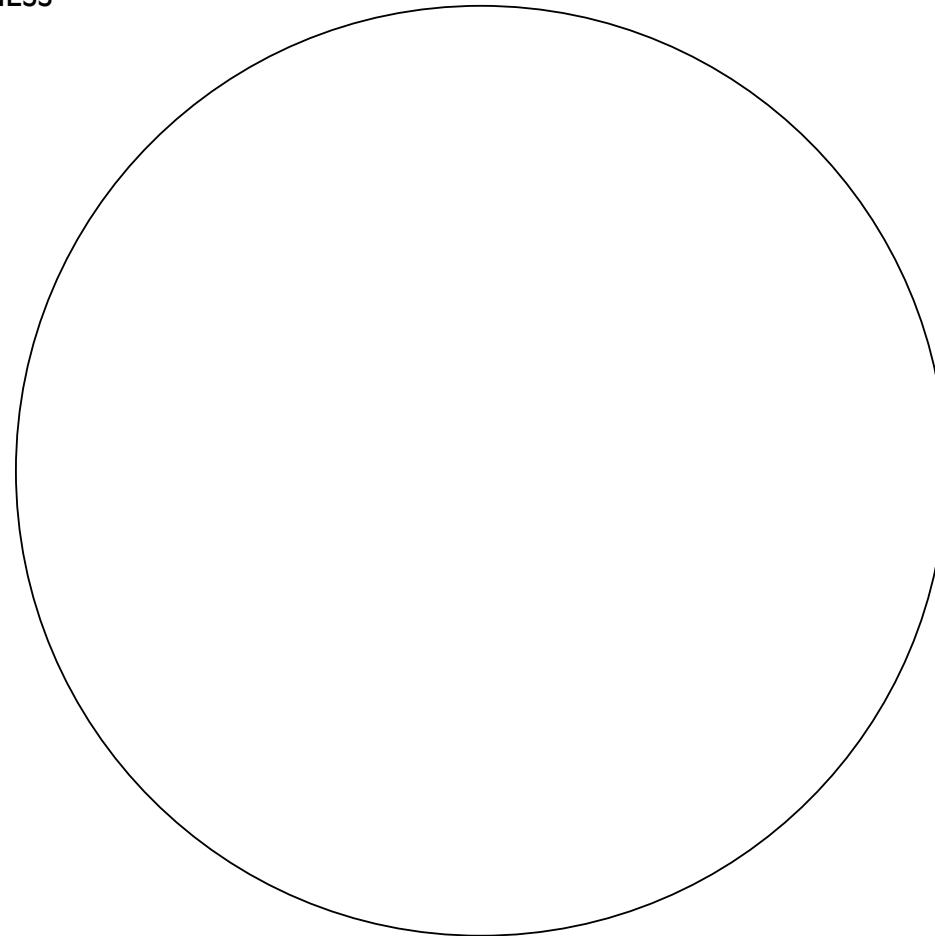
Business...

*“The organized pursuit of capital.”*

# Anatomy of a Product

BUSINESS

Marketing



Engineering

# Key Definition



Technology...

*“Anything that humans  
use or create that  
stretches their reach  
beyond their natural grasp.”*

# Technology

 **involution***studios*



# Anatomy of a Product

BUSINESS

Marketing



TECHNOLOGY

Engineering

December 2004

The Future of Digital Product Design  
Dirk Knemeyer :: BayDUX :: Sunnyvale

13

# Key Definition



User...

*“A **person** who  
is interacting with a specific design.”*

# Whither 'User'...



- The term 'user' is outdated and dehumanizing...
- ...but, it is understood and accepted by most organizations in our industry



# Not Users - **People!**

 **involution***studios*



December 2004

The Future of Digital Product Design  
Dirk Knemeyer :: BayDUX :: Sunnyvale

16



# Anatomy of a Product

BUSINESS

Marketing

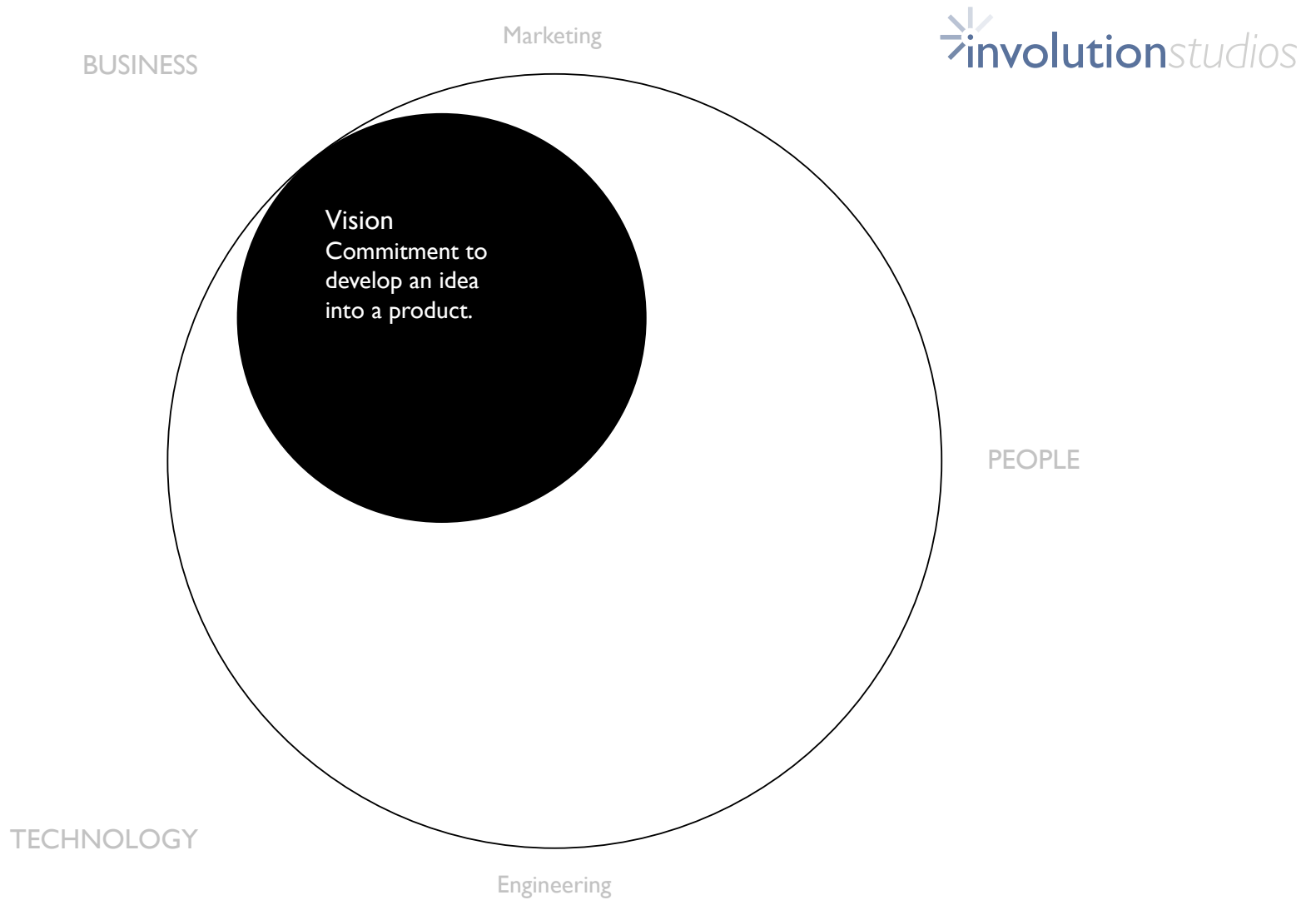


PEOPLE

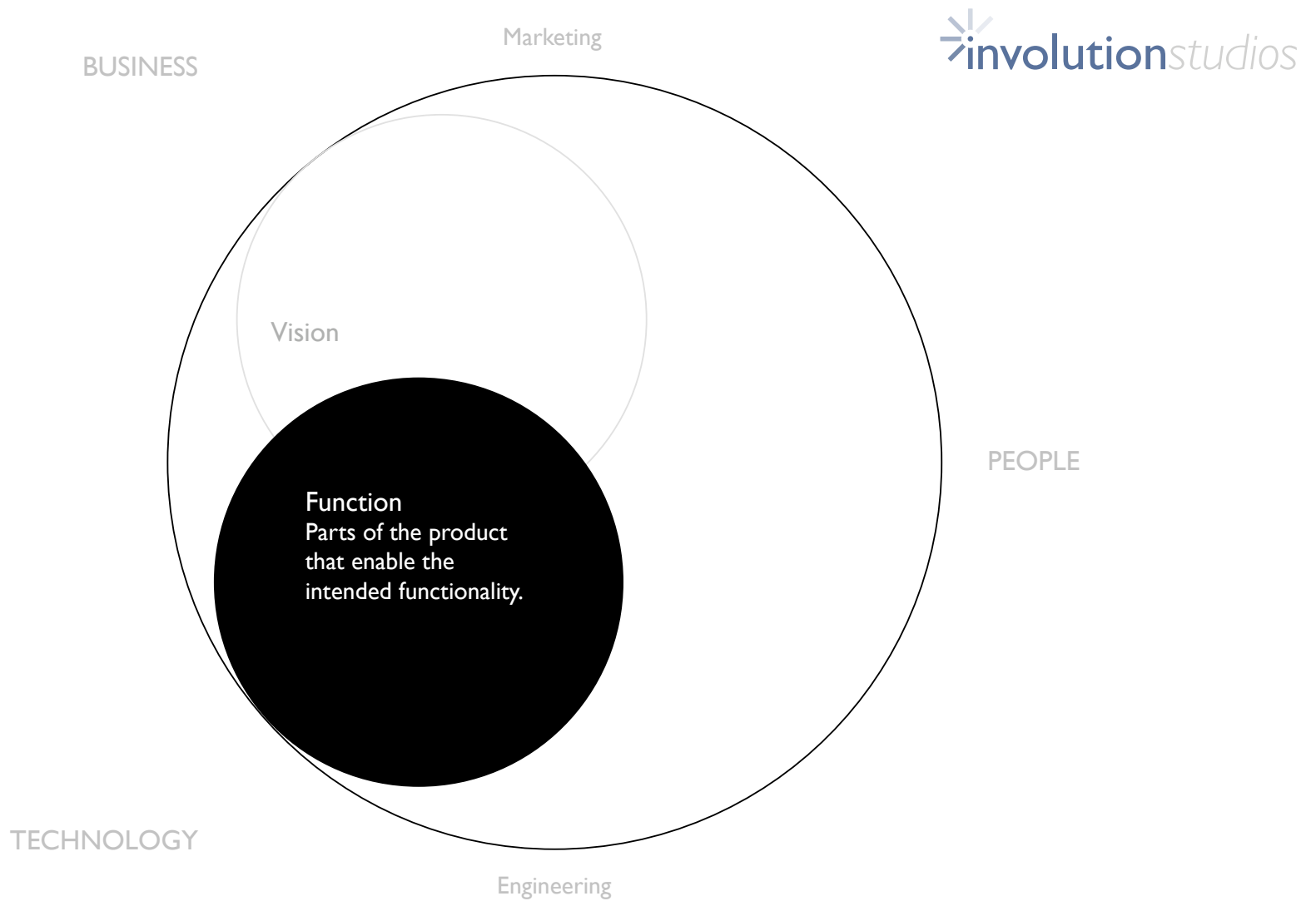
TECHNOLOGY

Engineering

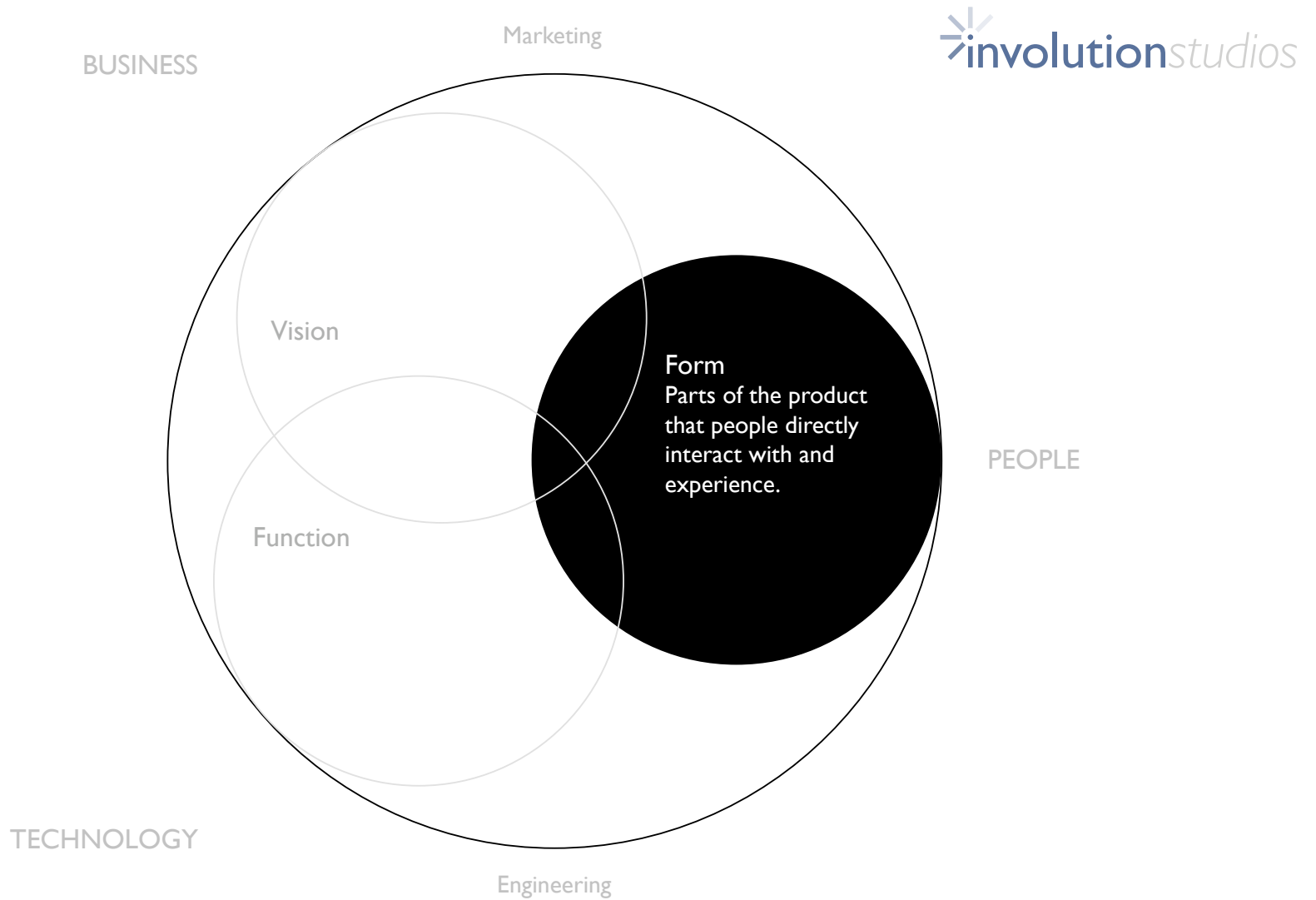
# Anatomy of a Product



# Anatomy of a Product



# Anatomy of a Product



# Key Definition



Digital product...

*“Any product that includes  
a digital component.”*

# Digital Products



 involutionsstudios



12:00



# Building Blocks (an incomplete list)



Printing

Mass Production

Photography

Electricity

Telecommunication

Radio

Motion Pictures

Television

Electronics

Computers

Digital Networks

**Digital Products**  
stand on the shoulders of  
**Mass Production**  
(large quantity and precision)  
and  
**Electricity**  
(enabling technology)



# Important characteristics



- Preservation - content can be preserved for future use
  - Printing, Photography, Motion Pictures, Electronics, Computers
- Distribution - experience not limited to physical place
  - Telecommunication, Radio, Television, Digital Networks

Did you know...

**Gateway**  
has employees with job titles including the words  
**Converged Products**

# Digital Convergence



- Great product!
- Essentially ubiquitous connection: you can be “always on” the network
- Allows various means of communication, global data access, various information capture
- Opportunities: improved interface and display

# Digital Convergence

involutionstudios



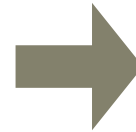
+



+



=



- Great product!
- Portable media archive and player
- Both eliminates physical storage needs and provides at-your-fingertips access
- Opportunities: move content off unit, expand media capabilities (movies?)

# Digital Convergence

 involutionsstudios



+



=



- Bad product!
- Poor usability: small viewing size of TV exacerbated by mandatory distance for viewing, to allow proper use of fridge
- Poor concept: during food preparation, a screen located on the television is not convenient for viewing
- Next stop: Internet Fridge!
- But...without improved interface, will be little more usable

# Digital Enhancement



- Decent product!
- Static Play vs. Interactive Play
- Essentially the same product, used the same way
- Interactivity increases structured learning opportunities but may stifle creativity
- Logical application of digital technology
- Opportunities: deeper teaching, going beyond the basic task response of present

# Next Generation Digital Products



- Very large and very small visual interfaces
- More natural/intuitive Human-Computer Interaction
- Increasingly “smart” use of technology
- Always online, everywhere

- :: Introductions
- :: Digital Products
- **User Experience Design**
- :: Trends
- :: Digital Product Design and You



Experience...

*“What our senses and mind  
perceive of the world.”*

# Key Definition



User Experience...

*“An emerging field  
concerned with the design  
of anything that people experience;  
a website, a toy or a museum.”*

*User Experience Network*

# Key Definition



Design...

*“Creation in or alteration of  
the physical world to meet  
the needs and desires of people.”*

# User Experience Needs Good Design

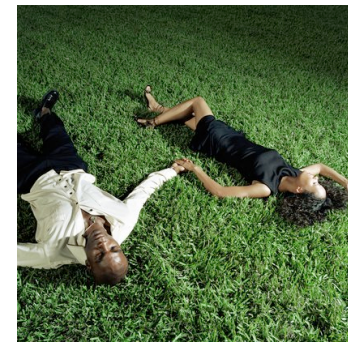
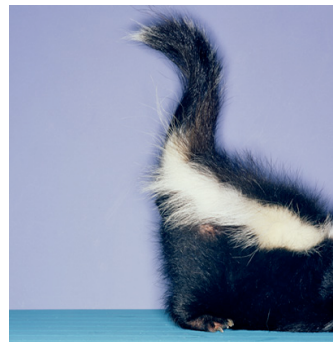


- **Must** address the *needs* and *desires* of people
  -
- **Must** affect both their *intellect* and *emotion*

# Design for All Five Senses



1. Sight :: sense currently most utilized by designers
2. Sound :: easy to integrate with most designs
3. Smell :: sense with the strongest relationship to memory
4. Taste :: the least utilized by designers
5. Touch :: the most intimate of the senses



# A Brief “Pleasure Pause”



User Experience Design...

*“Design that intends to maximize  
the quality and impact  
of each person’s experience.”*

# Anatomy of User Experience Design

BUSINESS

Marketing



PEOPLE

TECHNOLOGY

Engineering

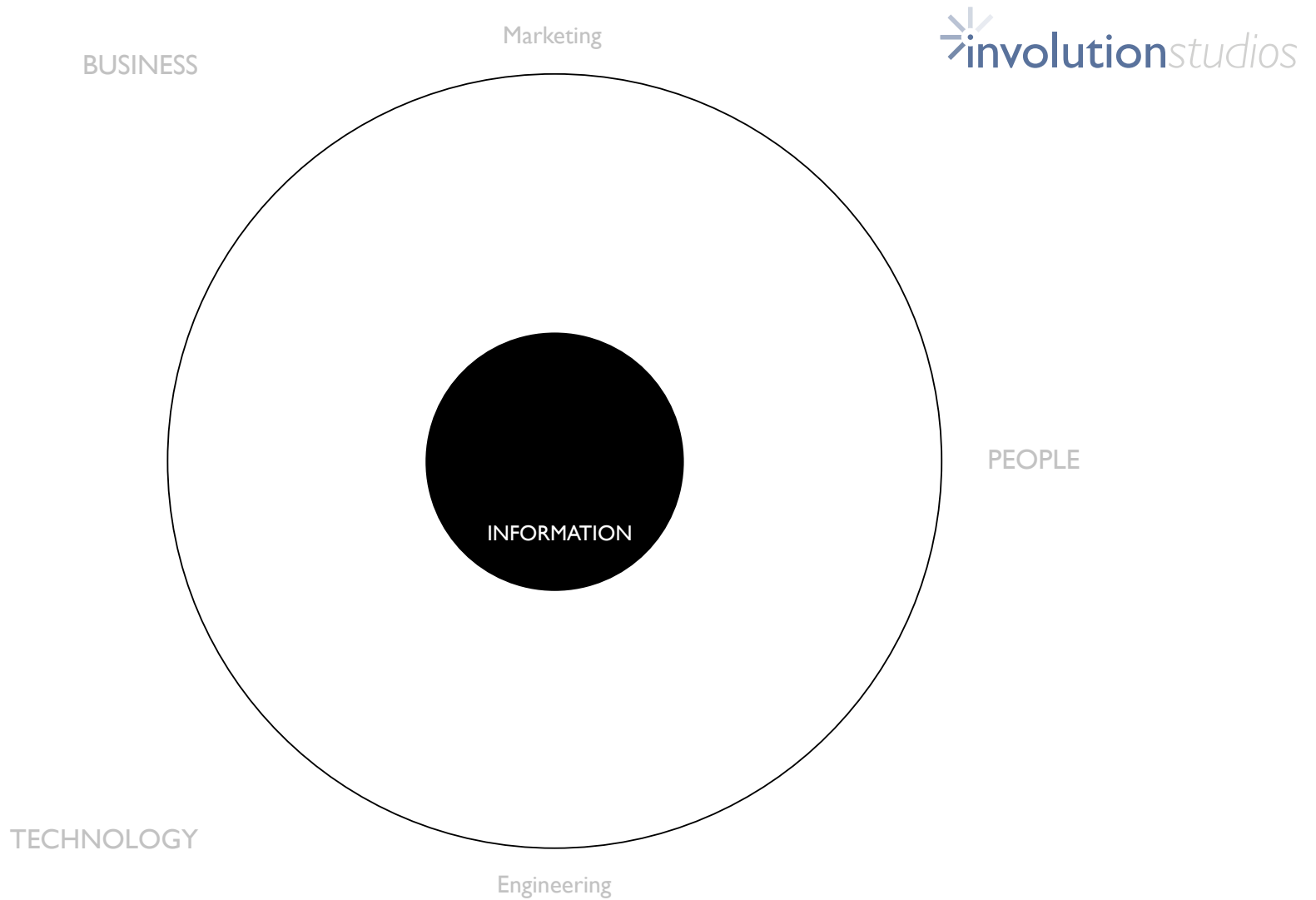
December 2004

The Future of Digital Product Design  
Dirk Knemeyer :: BayDUX :: Sunnyvale

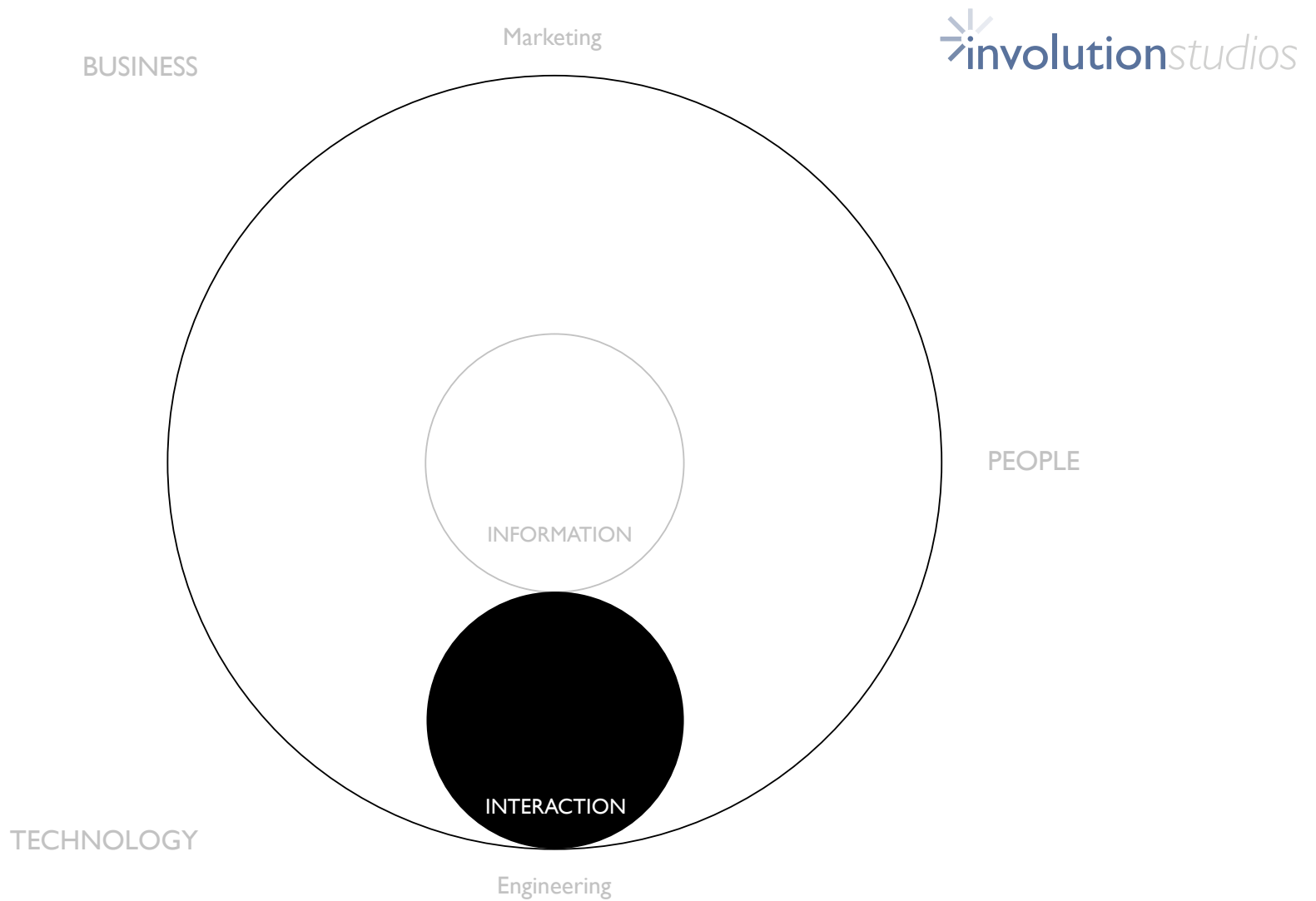
40



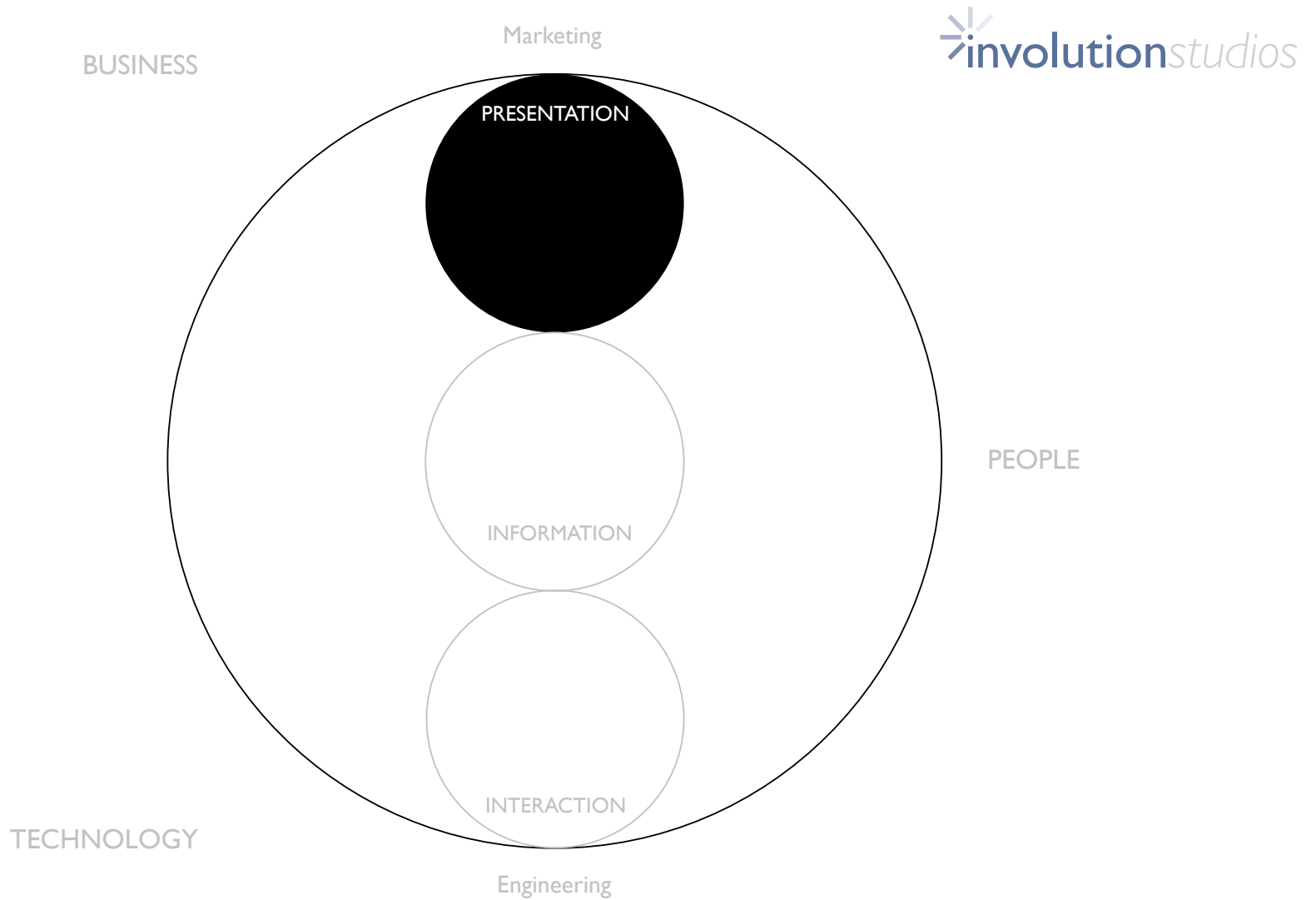
# Anatomy of User Experience Design



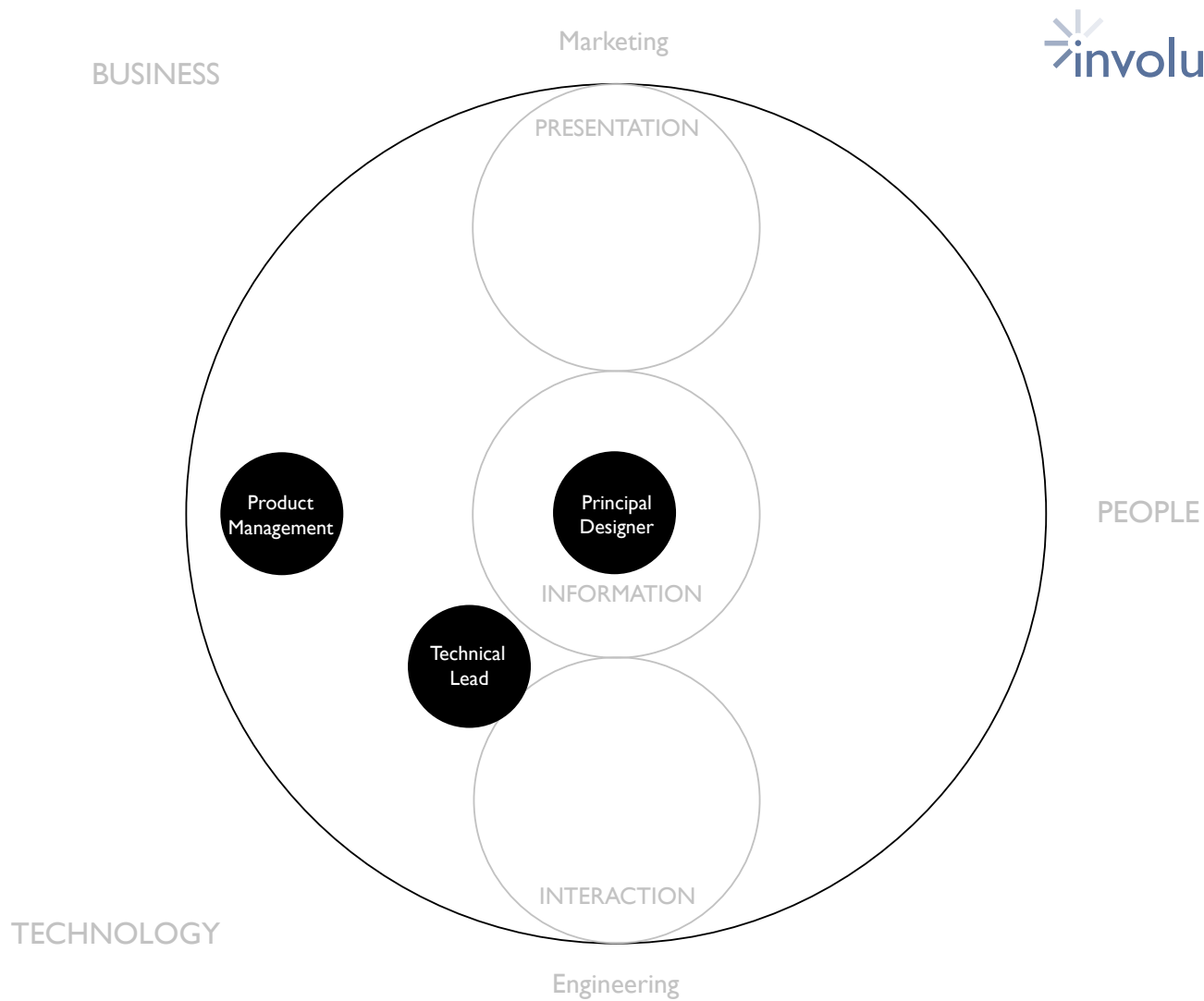
# Anatomy of User Experience Design



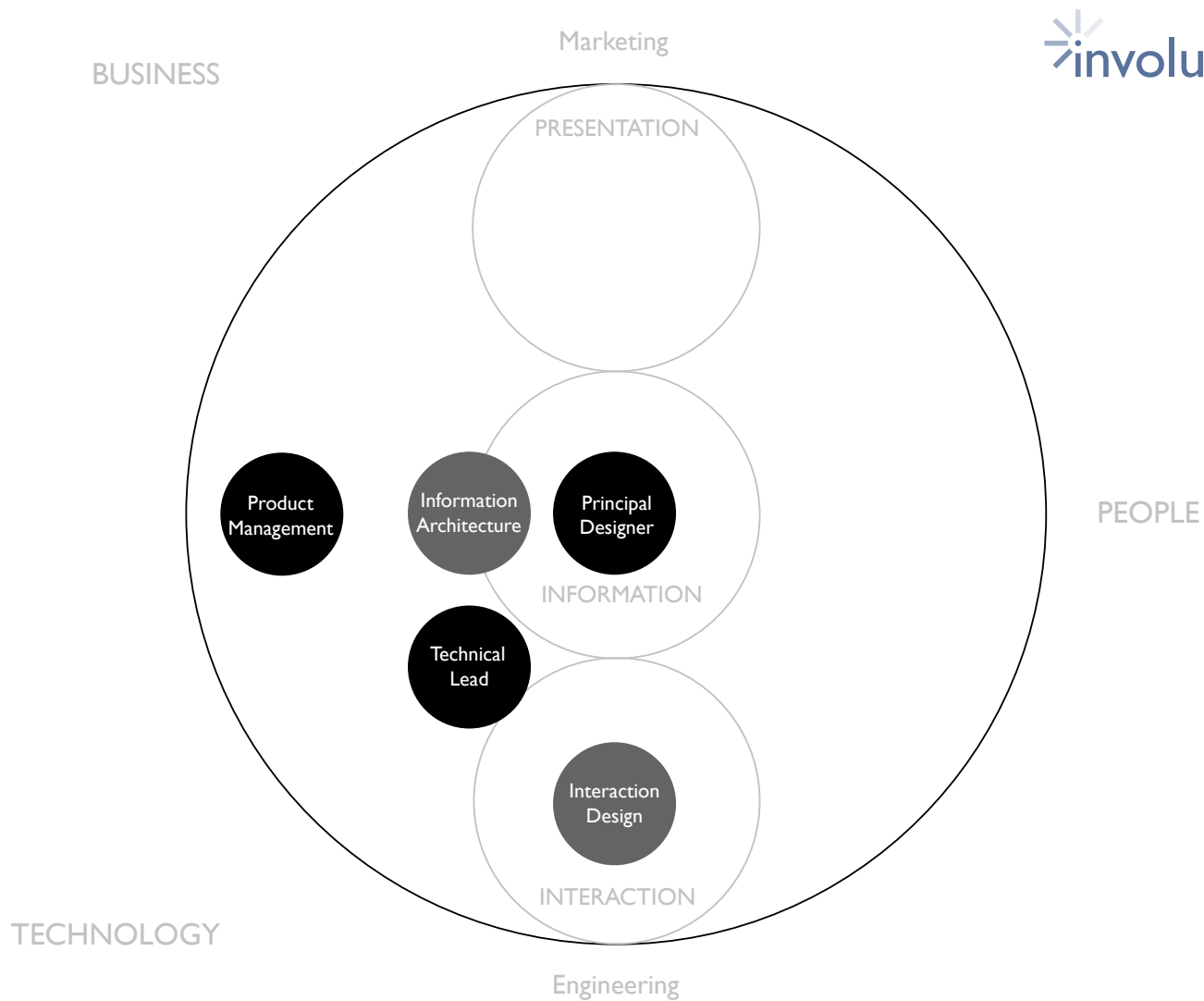
# Anatomy of User Experience Design



# Anatomy of User Experience Design

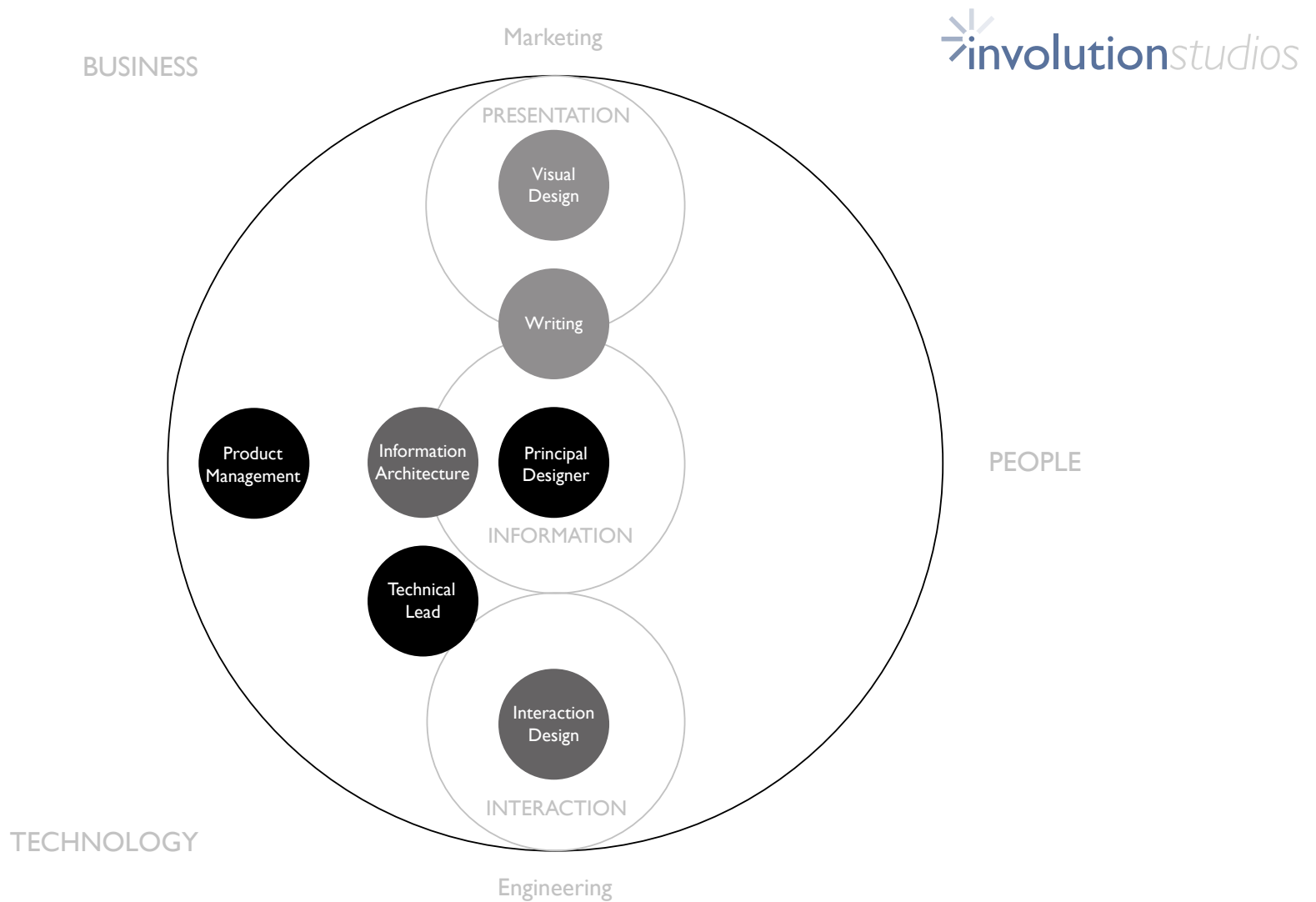


# Anatomy of User Experience Design

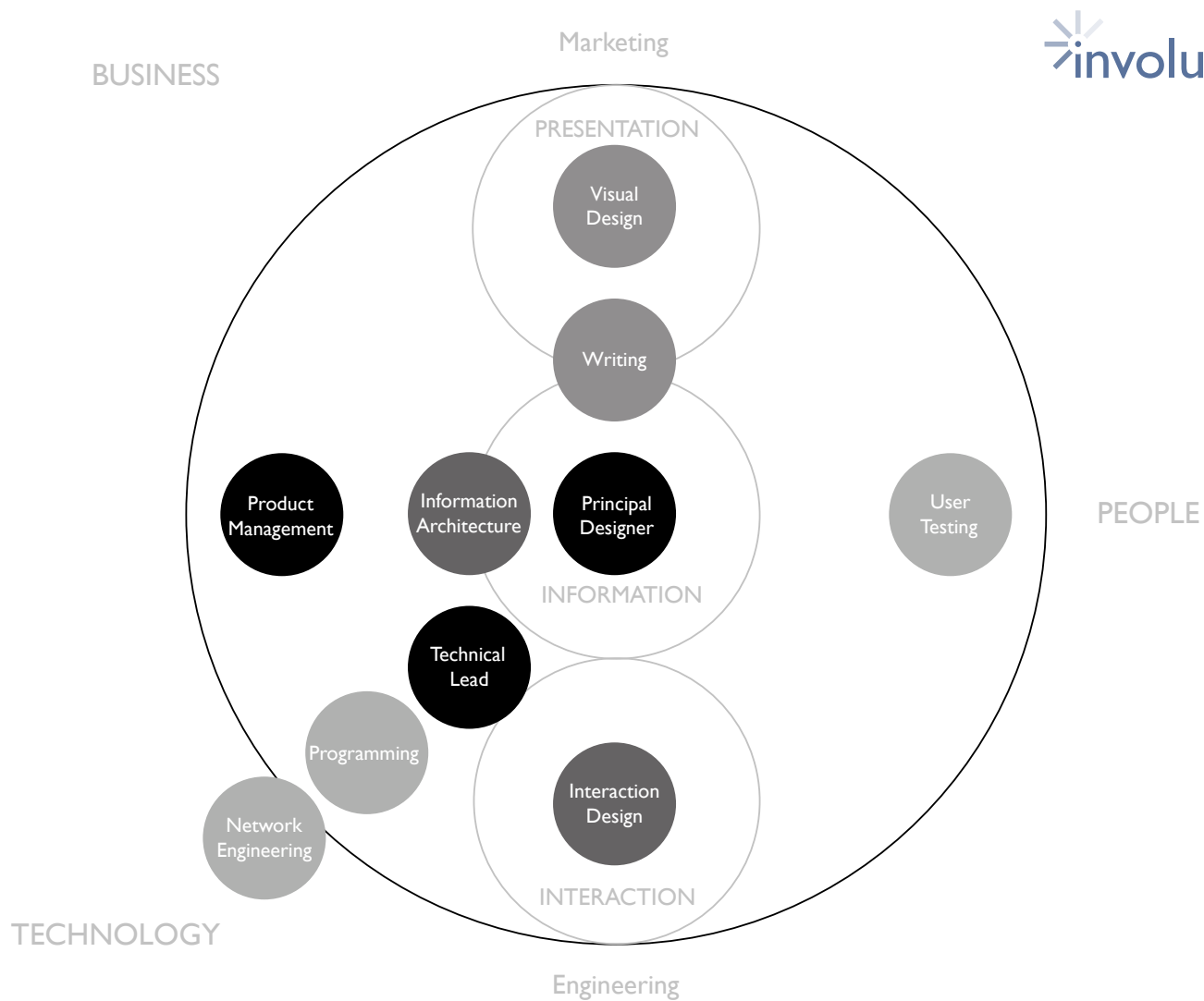


 **involution***studios*

# Anatomy of User Experience Design



# Anatomy of User Experience Design



# But...

what about research???



# Anatomy of User Experience Design



Research is the  
**most important**  
part of good design.

**Every** member of a UX Design team  
should be involved in different types  
and levels of research. It should be  
hard-coded into **every** function!!!

- :: Introductions
- :: Digital Products
- :: User Experience Design
- Trends
- :: Digital Product Design and You

## I. Global knowledge economy.

Emerging nations are rising quickly in the knowledge economy

Rapid evolution in business and design

# Global Knowledge Economy



## Positions Available

- Wanted:** Software interface designers to identify user task flows and needs, develop system navigation and page (or screen) solutions, create and implement usability tests.
- For:** 7 new positions in Mumbai (Bombay), India – to start between now and the end of January, 2005.
- Requirements:** Graduates of master's degree programs in human factors psychology (or cognitive or engineering psychology) or human factors engineering.
- Should have the interpersonal communication skills to serve as consultants to Global 2000 companies.
- How to apply:** E-mail resumes to [don@humanfactors.com](mailto:don@humanfactors.com)



Come and join the growing professional team at HFI-India in Mumbai.



*"I don't think this has been fully understood by the United States[.]...If you look at India, China and Russia, they all have strong education heritages. Even if you discount 90 percent of the people there as uneducated farmers, you still end up with about 300 million people who are educated. That's bigger than the U.S. work force."*

*Craig Barrett, CEO Intel*

## 2. Innovation.

Informed creativity for market differentiation

Uniqueness replaces standardization

# Innovation



 **involution***studios*

Lessons in Creativity from IDEO,  
America's Leading Design Firm



## The Art of Innovation

## 3. User-centered design.

Increased emphasis on research

Trying to understand what people need and desire

## 4. Expanded functionality.

Accomplish more tasks

Integrate complementary functions



# Expanded Functionality

 **involution***studios*



December 2004

The Future of Digital Product Design  
Dirk Knemeyer :: BayDUX :: Sunnyvale

57

## 5. Sustainability.

Materials with extended lifecycle

Environmentally smart

**CNN.com** MEMBER SERVICES International

**SEARCH** ☐ The Web ☐ CNN.com

- Home Page
- World
- U.S.
- Weather
- Business at CNNMoney
- Sports at SI.com
- Politics
- Law
- Technology**
- Science & Space
- Health
- Entertainment
- Travel
- Education
- Special Reports

**TECHNOLOGY**

## From cell phone to sunflower

Scientists make phone cover that turns into flower

Monday, December 6, 2004 Posted: 11:48 AM EST (1648 GMT)

**AMSTERDAM, Netherlands (Reuters) --** Scientists said on Monday they have come up with a cell phone cover that will grow into a sunflower when thrown away.

Materials company Pvaxx Research & Development, at the request of U.S.-based mobile phone maker Motorola (MOT.N), has come up with a polymer that looks like any other plastic, but which degrades into soil when discarded.

Researchers at the University of Warwick in



A sunflower seed placed inside these cell phone covers will grow into flowers, according to scientists.

**THE HOLIDAY HUSTLE is HERE**  
CNN.com Find a GIFT

**SERVICES**  
Video

## 6. Invisible design.

Products blend with their environment

Reflect aesthetic of each user

# Invisible Design

 **involution***studios*



December 2004

The Future of Digital Product Design  
Dirk Knemeyer :: BayDUX :: Sunnyvale

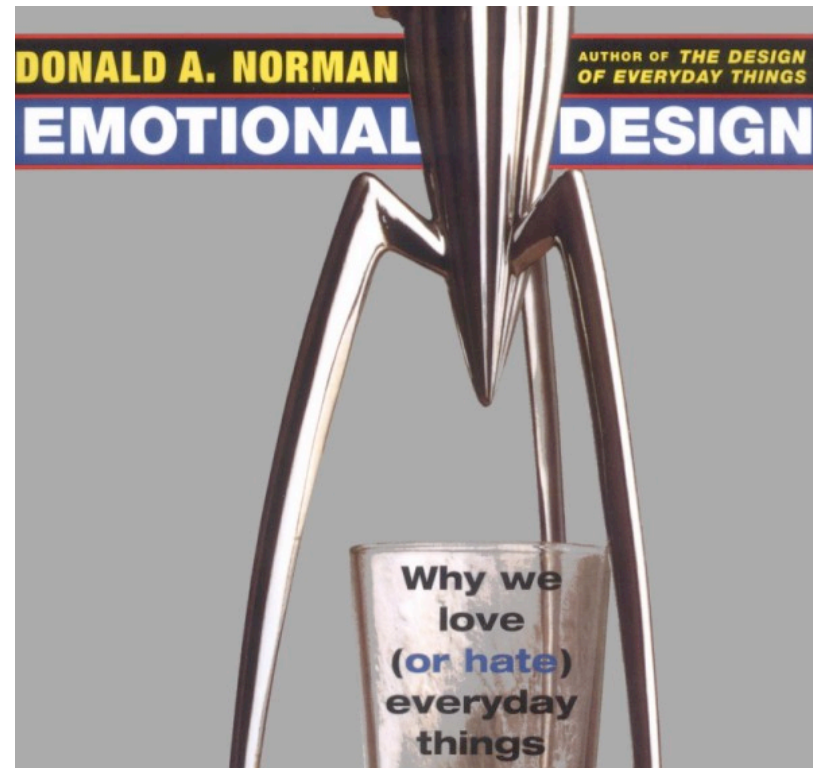
61

## 7. Emotional design.

Products designed to make emotional connections

Design goals work from the inside-out

# Emotional Design



Global knowledge economy

Innovation

User-centered design

Expanded functionality

Sustainability

Invisible design

Emotional design



Companies are aggressively trying to **seize**  
the **minds, hearts, and spirits**  
of **people**  
by **innovating** their products through  
basic **listening** and **responding**.

# Market Evolution



## I. Innovative new technology is introduced

# Market Evolution



1. Innovative new technology is introduced
2. Market demands result in much – often poor – copying and re-purposing

# Market Evolution



1. Innovative new technology is introduced
2. Market demands result in much – often poor – copying and re-purposing
3. Market backlash results in broad optimization

# Market Evolution



1. Innovative new technology is introduced
2. Market demands result in much – often poor – copying and re-purposing
3. Market backlash results in broad optimization
4. Market boredom results in demand for innovation

# Market Evolution



1. Innovative new technology is introduced
2. Market demands result in much – often poor – copying and re-purposing
3. Market backlash results in broad optimization
4. Market boredom results in demand for innovation
5. Depending on the market situation, steps 2-4 may repeat

# Market Evolution



1. Innovative new technology is introduced
2. Market demands result in much – often poor – copying and re-purposing
3. Market backlash results in broad optimization
4. Market boredom results in demand for innovation
5. Depending on the market situation, steps 2-4 may repeat
6. Next-generation innovation leads to the creation of new technologies and products that ultimately render obsolete original technology obsolete

SO...

what next?



# Future Trends



## I. Overwhelmed “users” demand simplicity

# Future Trends



1. Overwhelmed “users” demand simplicity
2. Optimization tempers innovation

# Future Trends



1. Overwhelmed “users” demand simplicity
2. Optimization tempers innovation
3. Science and business increasingly converge

# Future Trends



1. Overwhelmed “users” demand simplicity
2. Optimization tempers innovation
3. Science and business increasingly converge
4. Emotional design is part of a chorus, not the star

# Future Trends



1. Overwhelmed “users” demand simplicity
2. Optimization tempers innovation
3. Science and business increasingly converge
4. Emotional design is part of a chorus, not the star
5. People have on-demand access to centralized content, instead of local “ownership” of it

# Future Trends



1. Overwhelmed “users” demand simplicity
2. Optimization tempers innovation
3. Science and business increasingly converge
4. Emotional design is part of a chorus, not the star
5. People have on-demand access to centralized content, instead of local “ownership” of it
6. Specialized products make a comeback

- ∴ Introductions
- ∴ Digital Products
- ∴ User Experience Design
- ∴ Trends
- Digital Product Design and You

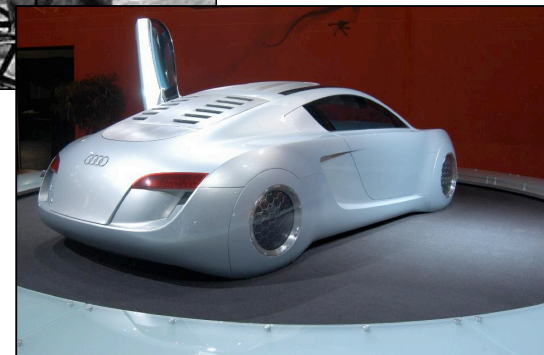
# Digital Product Design is...



## ...complex & multi-disciplinary

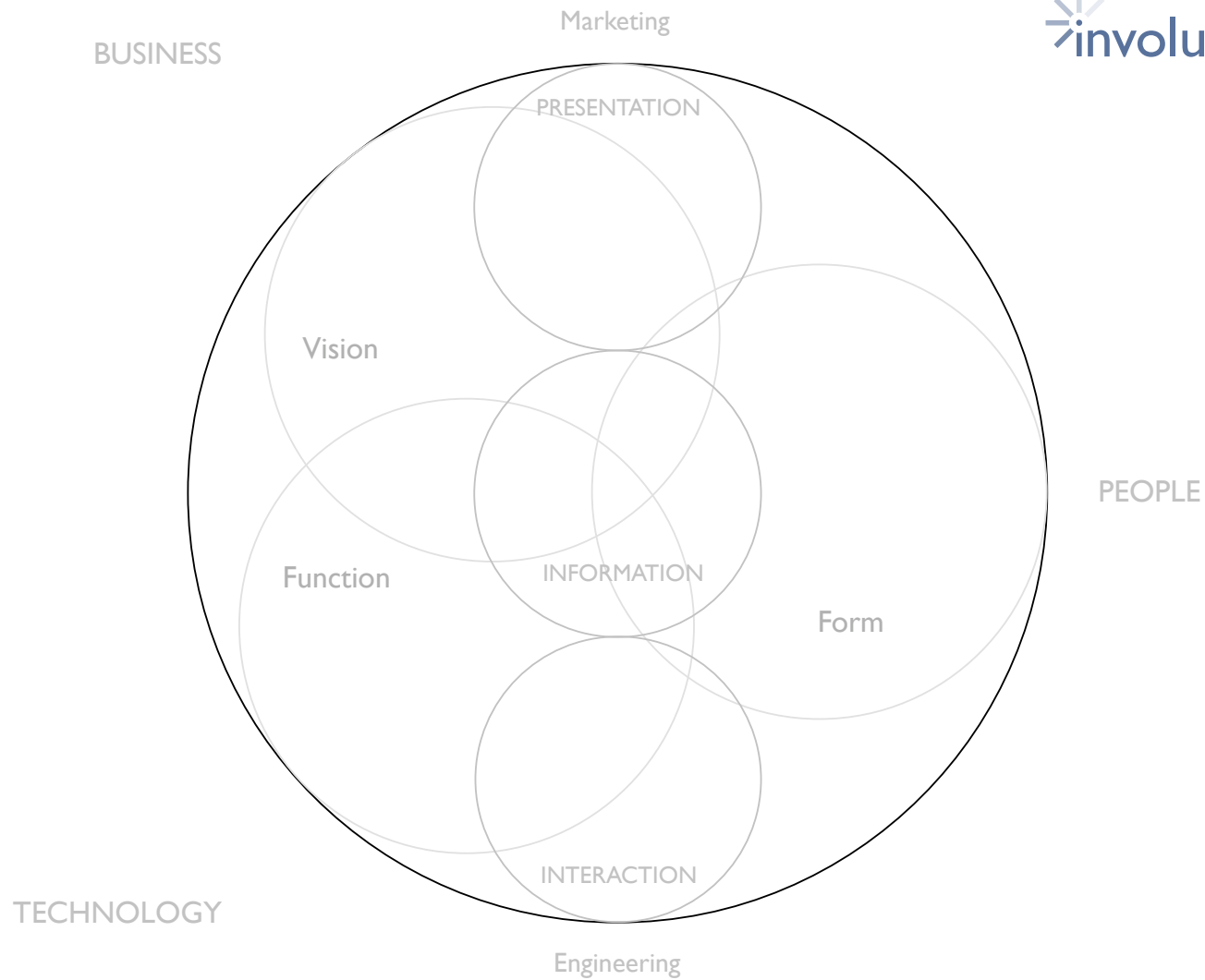
It requires:

- A re-definition of problems and solutions
- A broad knowledge-base across many disciplines and a deep knowledge-base through at least one discipline
- Collaborative methods and mindsets

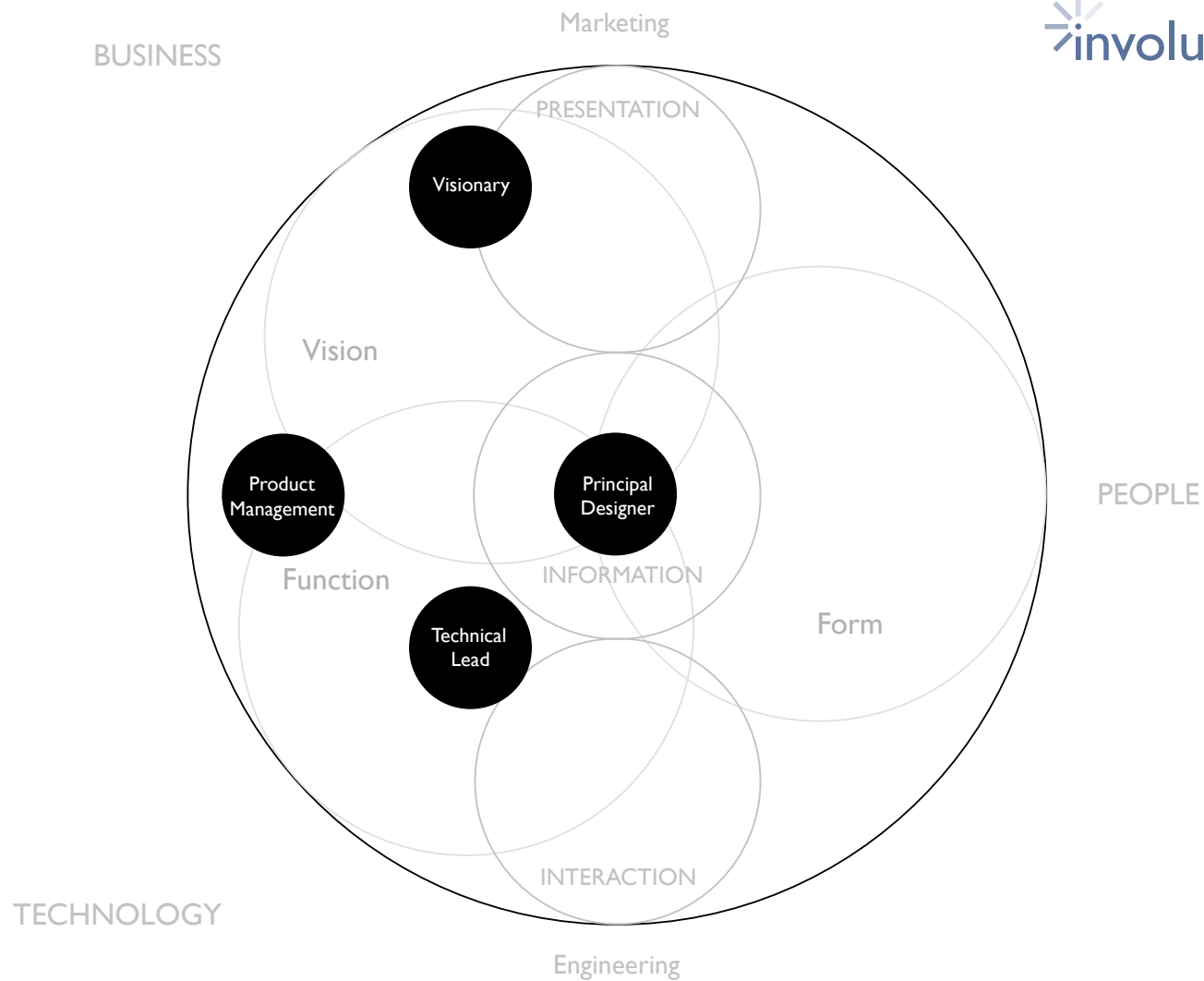




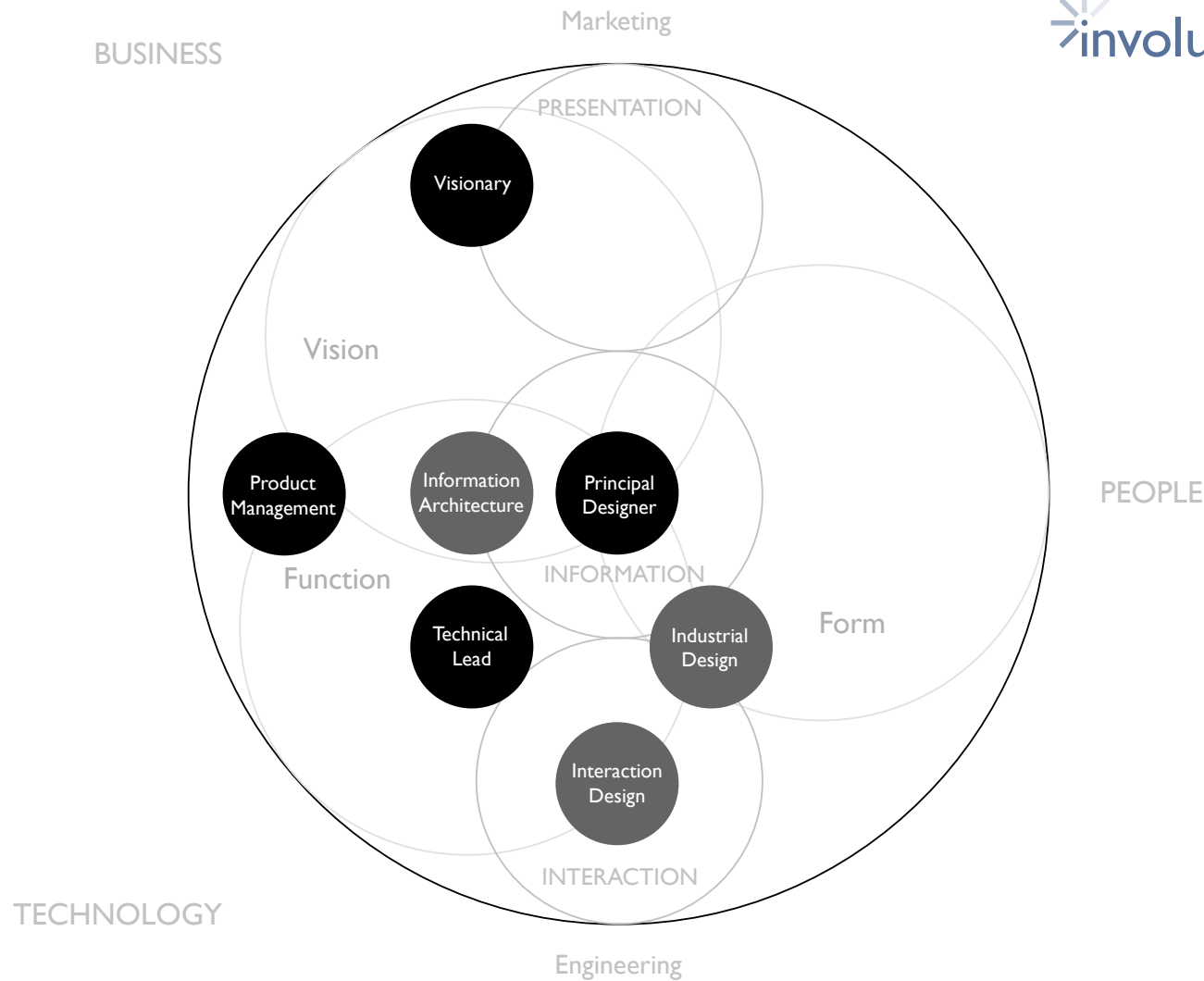
# Anatomy of Digital Product Design



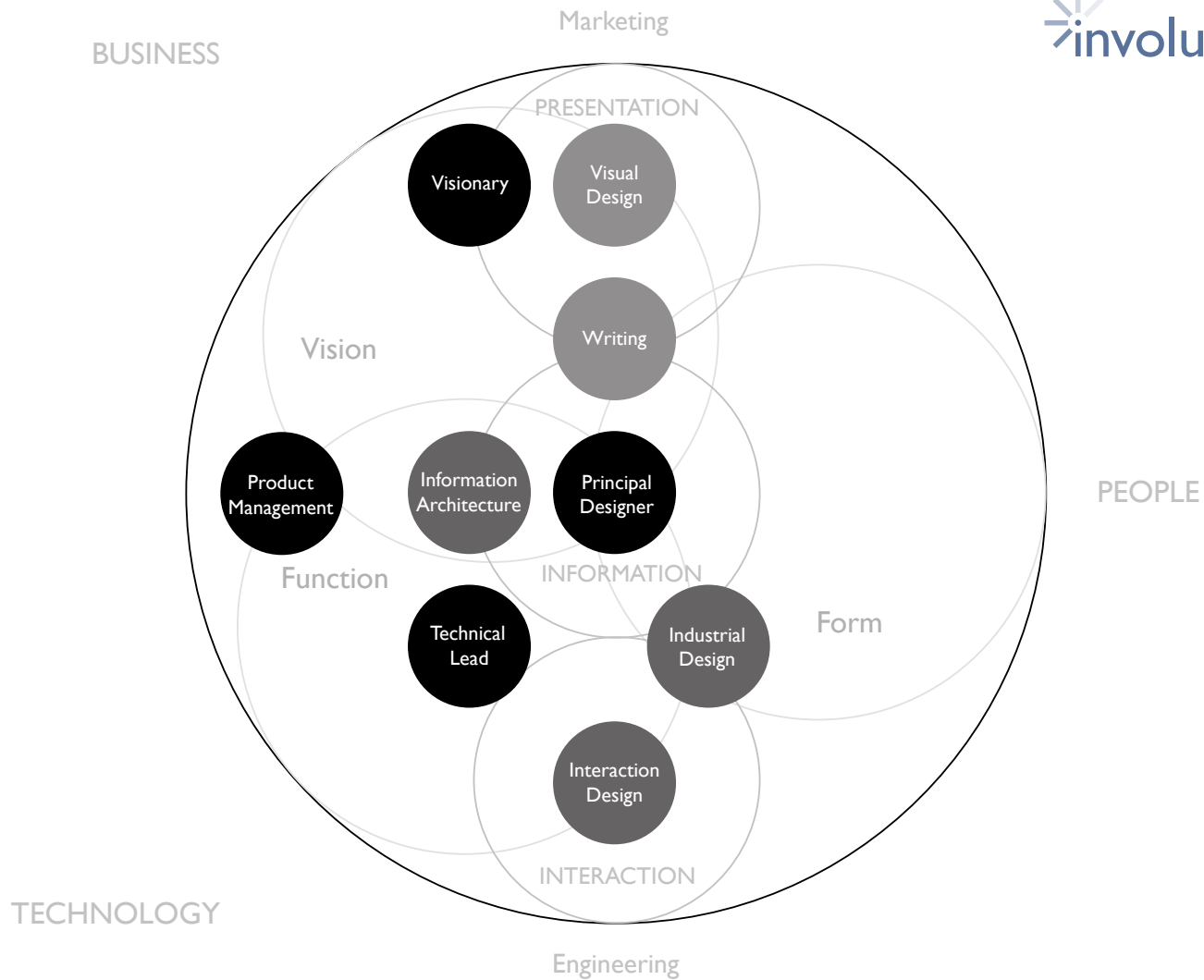
# Anatomy of Digital Product Design



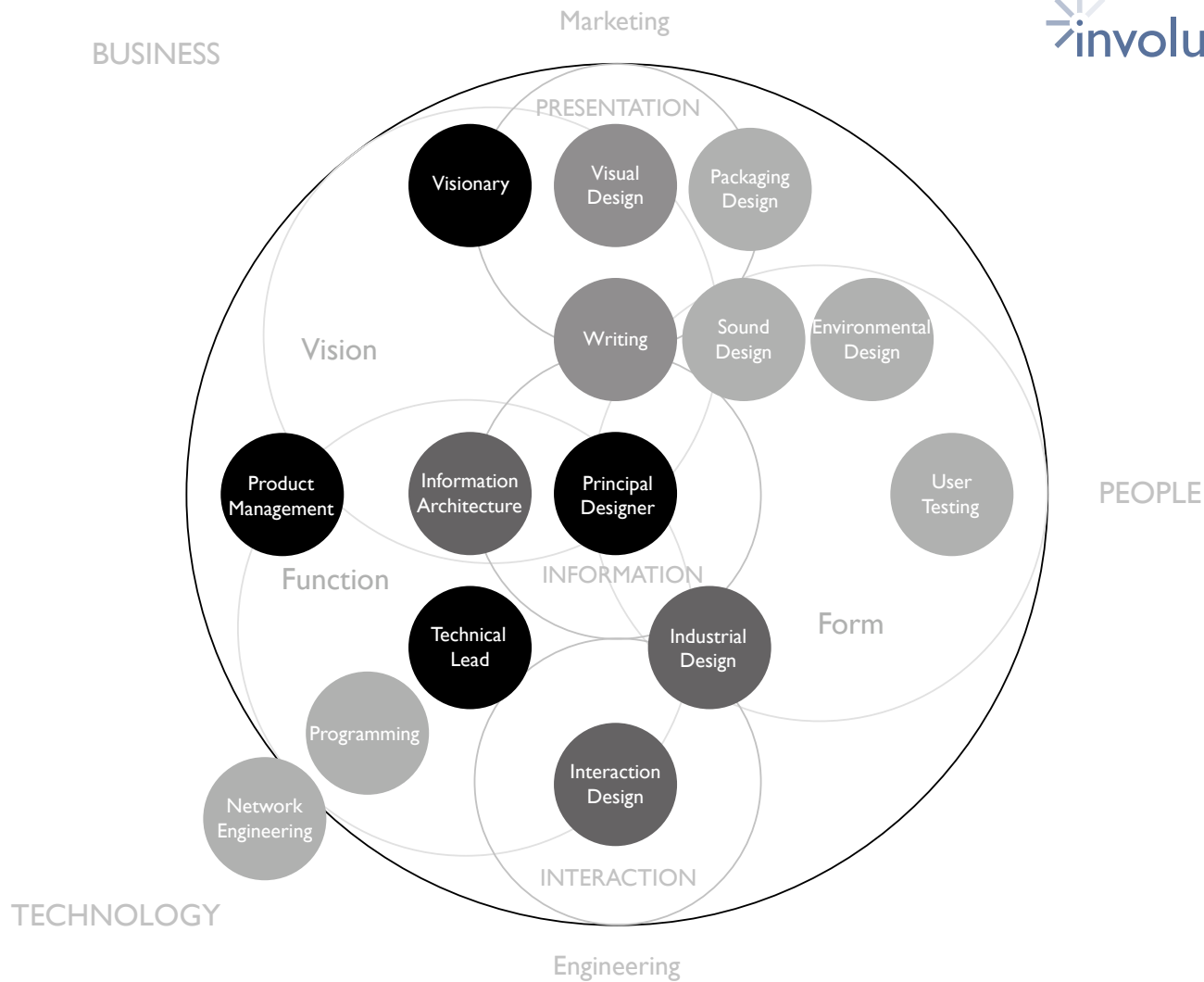
# Anatomy of Digital Product Design



# Anatomy of Digital Product Design



# Anatomy of Digital Product Design

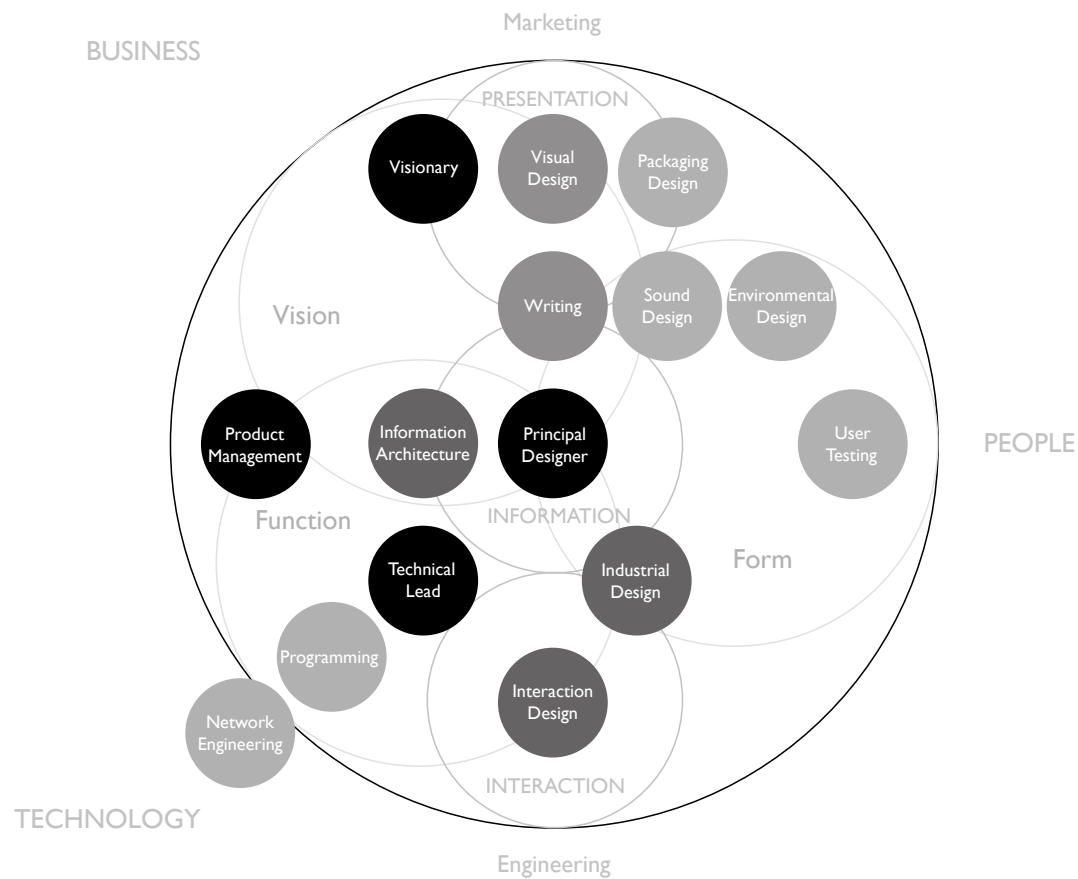


# Why DPD matters to you



- More and more of *our* jobs and functions are being commodified
- User experience design will increasingly become a sub-component of digital product design
- Makes us more valuable to our employers and clients
- Represents new challenges and deeper understanding of what we do
- Increases our earning potential

# Digital Product Design and You



## What should I do?

- Grow upstream (aspire to the lead roles; explore the newer, less saturated roles)
- Expand your skills horizontally
- Expand your skills vertically

# Digital Product Design and You



## **Continue your formal education**

- Stanford University “D” School
- Harvard Business School - Advanced Leadership Program for Design
- Bentley College - dual MBA/MS in design areas
- Interaction Design Institute Ivrea
- Institute of Design, Chicago



# Digital Product Design and You



## **Collaborate**

- Join groups, make relationships with passionate and interesting people
- Shape the next generation: engage with academia, mentor young professionals
- Find *your* unique voice

*“Sharing knowledge is better than having it.”*

Peter J. Bogaards

# Digital Product Design and You



## Take Control

- Partner with or contract top people in this space to learn more and grow your company, department, or team

*“Become the change you want to see in the world”*  
Gandhi

# Thanks!



- BayDUX, Yahoo!, and everyone involved who contributed to this event
- All of the other sponsoring organizations
- Andrei Herasimchuk

*“Become the change you want to see in the world”*  
Gandhi



[dirk@involutionstudios.com](mailto:dirk@involutionstudios.com)