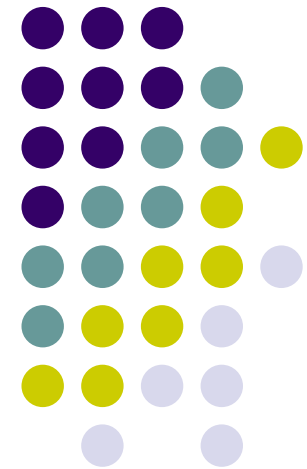


# Creativity and You

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**Professor Shi-Kuo Chang**

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- What is Creativity?
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# Follow-up Course: CIS572 Digital Art Workshop



- The course will be taught online
- Students will have a chance to interact with internationally known digital artists
- Organized by Miros Rogala, Director of Digital Art, Knowledge Systems Institute
- Three course credits are applicable to an accredited **online Master Degree in Digital Art** offered by Knowledge Systems Institute
- Visit [www.ksi.edu](http://www.ksi.edu) or write to office@ksi.edu

# What is Creativity?



- Creativity is the ability to synthesize something *new and better* and therefore *more valuable*. It requires both divergent thinking and convergent thinking.
- Divergent Thinking - exploring solutions
- Convergent Thinking - solving problems (*Joy Paul Guilford*)
- **Everybody can be creative** - *Creativity* with a big C (scientists, artists, composers, etc.) and *creativity* with a small c (hair dressers, carpenters, cooks, etc.)

(Source: 科學人2005年十一月45期 詹志禹文)



# The Rise of the Creative Class



- *The Rise of the Creative Class*, Richard Florida, Basic Books (Perseus Books Group), 2002 (new edition 2004).
- Human creativity is the ultimate economic resource. The ability to come up with new ideas and better ways of doing things is ultimately what raises productivity and thus living standards.
- The number of people doing creative work has increased vastly over the past century and especially over the past two decades, now accounting for about one third of the work force. This is happening all over the world.

# The Creative Class



- The creative people are the scientists, engineers, artists, musicians, designers and knowledge-based professionals.
- A fundamental transformation is taking place. Our workplaces are changing. Creativity and mental labor have become the force of production. People are more mobile. We are postponing marriage. Our family structures are changing.
- Communities are changing. We are replacing a small number of strong-tie relationships with a much greater number of weak-tie relationships.
- Inequality is rising. Inequality is the highest in the creative epi-centers (of the US economy).

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# The New Class Structure



- **Creative Class**  
Supercreative Core scientists, engineers, architects, education, training  
arts, design, entertainment, sports, media, life, physical, social sciences occupations
- **Creative Professionals**  
management, business, financial, legal, healthcare practitioners and technical occupations  
high-end sales and sales management
- **Working Class**  
construction and extraction occupations  
installation, maintenance and repair  
production, transportation and materials moving
- **Service Class**  
health care, food production and service, personal care, low-end sales, office and administrative support, community and social service, protective service
- **Agriculture**  
farming, fishing, forestry

# Ethos of Creativity



- Creativity is the ability to synthesize. It requires long hours of work and a lot of stress. Creative people get to do more enjoyable work and they contribute more by *adding creative value*. They also get paid better.
- The service economy is the support infrastructure of the creative age.
- Creative people are self-centered, and self-absorbing. They and the ordinary workers think differently, read different newspapers, watch different shows, have different life styles, and vote for different parties.
- The Creativity Divide: As a consequence, USA, and most countries with strong economy, is becoming a divided nation. The world is also becoming a divided world.

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# Creative Cities: Epi-centers of Creativity



- Gay Index (the relative concentration of gays. In 1988 Florida and Gary Gates discovered high tech cities are also high in gay index)
- Bohemian Index (the relative concentration of artists, writers, musicians and other artistic professionals).
- Creativity index (based on technology index, talent index and tolerance index)
- Inequality Index (relative level of social inequality)
- Place is the key economic and social organizing unit of our time. Cities (regions) with high creativity index has high correlation with cities (regions) with high gay index, bohemian index, and inequality index.

# The Three T's for Growth



- Technology
- Talent
- Tolerance

Ten regions with top creativity ranking also has high (technology, talent, tolerance) ranking: Austin(1, 3, 7), San Francisco(3, 5, 6), Seattle(6, 6, 1), Boston(12, 4, 3), Raleigh-Durham(2, 2, 20), Portland, OR(4, 19, 2), Minneapolis(16, 9, 4), Washington-Baltimore(15, 1, 16), Sacramento(5, 11, 17), Denver(12, 8, 8).

Ten regions with top tolerance index also rank high in (melting pot index, gay index, boho index, integration index): Seattle(18, 4, 6, 5), Portland OR(19, 10, 13, 1), Boston(14, 5, 9, 8), Minneapolis(27, 25, 10, 4), Providence(16, 19, 15, 7), San Francisco(3, 1, 3, 39), Austin(15, 3, 7, 29), Denver(20, 14, 11, 17), Orlando(17, 14, 8, 27), Los Angeles(2, 11, 1, 44).

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# Creativity and the Future of Taiwan Economy



The key to continued economic prosperity for  
Taiwan:

- strive for innovation and creative refinement of products
- encourage companies to be creative
- provide incentives for regions to be creative

# 台灣都會區人才、社交地、創業之探索性研究

An Exploratory Study on Taiwan's Urban Talents, Social Places, and Entrepreneurship

吳明璋、溫肇東

政治大學科技管理研究所博士班學生、政治大學科技管理研究所所長、教授



表3依Pearson 卡方檢定 (Chi-Square) 分析七  
大都會區受訪者之人才、第三地與創業之結果。

表 3 台灣七大都會區問卷統計 – 結構分析

	第三地不同背景的人接觸頻率		創業容易度		
	高科技人才	藝文人才	高科技人才	藝文人才	第三地
台北	35.281***	68.929***	28.721***	79.636***	
新竹			35.745***	40.430***	
台中	34.748**		152.537***	164.279***	
嘉義	72.939***		111.062***	121.828***	37.428**
台南			102.771***	159.812***	43.106***
高雄	56.412***	43.391***	98.298***	221.663***	33.347**
花東		59.057***	148.161***	98.02***	

# Creativity and the Future of Taiwan Economy



Certain types of industry will ALWAYS remain in Taiwan:

- Those requiring extensive local knowledge
- Those requiring high degree of human interaction
- Those requiring creative adaptation to local conditions

# How Microsoft Manages Creativity?



- Hire **smart people** who think
- Expect employees to fail
- Keep repercussions small when people make mistakes
- Create an **us vs them** mentality
- Sustain the company's **start-up mentality**
- Make the office **feel like home**

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# How Apple Manages Creativity?



- Emphasizes Highly Desirable Products and Brands
- **Respects for End User**
- User's Emotional Attachment
- Overcomes NIH (Not Invented Here) Syndrome
- Success of iPOD

(Source: 數位時代2005年十一月118期 龐文真 文)



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# How BMW Manages Creativity?



- Emphasizes the **Ultimate Driving Machine**
- Let Products Speak for Themselves
- Bold design provides ten years lead
- Quality in Design and Engineering

(Source: e天下2005年十一月號 陳修賢 文)



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# What's Creative in Web 2.0



- Refers to **light-weight business models** providing services rather than software products
- Server-side web applications provide **light-weight user interfaces**
  - User interacts through a web browser
  - AJAX utilities provide rich user experience
- Development and updates evolve continuously
  - “Perpetual beta”
  - Users interaction drives software changes
  - **Users act as co-developers**
- Database
  - Store, organize, and manage **user data**
  - Data **changes quickly**

# What's Creative in Web 2.0



- Provide data management services
  - Service evolves with user experience
  - Users determine how they'll use the service
- Users act as data sources
  - Provide content
- Richness of content grows as more people contribute – Collective Intelligence
  - Data gains more meaning/relevance
  - Utilizes the “collective intelligence”
- Syndication
  - Don't dictate how data is used
- Reuse
  - Incorporation into or combination with other services

# Web 2.0 Services



- Google
  - Mail, maps, calendar, word processing, spreadsheets, etc
- SourceForge.net
  - User-created open source software project
- Amazon
  - User reviews, “People who bought this item also purchased”
- eBay
  - User generated auctions
- BitTorrent
  - Collaborative file storage and transfer
- Wikipedia
  - Collaborative Encyclopedia
- YouTube
  - Video sharing
- Mapquest
  - Online maps and directions
- Paypal

# What's Creative in Social Networking



- Involves the formation of **interpersonal relationships**
  - Business, academic, dating, hobbies, sports, and activities
- In the context of Web 2.0
  - Web service provides representation of these real world relationships
    - Friends, business partners, or teammates
  - Organize digital information relevant to or indicative of these relationships
  - **Context provides the means to find and create new relationships with different people**

# MySpace



- The flagship social networking site
- Open registration with an email address
- Users create personal profile
  - Displayed as personal website
  - Customizable HTML using style tags
  - Becomes content of the system

# MySpace Services



- **Friends List** – link to other friends' pages
- **Favorites List** – link to other peoples' pages
- **Messaging** – email-like
- **Groups** – link to others with common interest
- **Blogging**
- **Events** – link to others attending an event
- **Bulletins** – Broadcast messages posted for friends
- **Entertainment Industry**
  - Artists, Movies, Comedians advertise themselves on their pages
  - Link to favorite artists as a friend
  - Incorporate songs into profile
- **Videos**
  - Users can upload home videos
  - Incorporate into profiles
- **Professional Networking**
  - Link to particular schools, colleges or companies
  - Self-tagging into a taxonomy of professions

# Regional Economic Growth



- How to achieve economic growth? How to attract high tech companies? How to attract talented people? (Lesson of Austin vs. Pittsburgh. They started being about the same, but look at Austin now! Pittsburgh lost the competitive edge due to its conservative policies. To attract people and business, it is not sufficient just to build a new stadium.)
- The key thing to understand is that **the solution lies in the hands of each region - in the knowledge, intelligence and creative capabilities of the people.**

# Size does not Matter!



- The key is to "squelch the squelchers" - the controlling leaders, micromanagers, and broader structures of social control and vertical power.
- The competitors to watch will be a host of smaller countries, such as Finland, Ireland, Australia, New Zealand, Denmark, Sweden, ..., etc. that have built dynamic, creative climates and are turning out creative products ranging from Nokia cell phones to the *Lord of the Rings* movies.



# Mobility of the Creative Class



- Richard Florida says, "The real threat to American security is not terrorism, it's that creative and talented people may stop wanting to come (to USA)."
- Likewise, the real threat to Taiwan security is not China or the *Mainlanders*, it's that creative and talented people (and businesses) may want to go elsewhere.

# How to develop your Creativity



- Creativity is the ability to synthesize, i.e., to discover new relations among seemingly unrelated things.
- The best example is the invention of the sewing machine.
- What does sewing machine, needle, thread and aboriginal's spear have in common?
- The dream of Elias Howe.
- The first functional sewing machine was invented by the French tailor, Barthelemy Thimonnier, in 1830. Thimonnier's machine used only one thread and a hooked needle that made the same chain stitch used with embroidery. The inventor was almost killed by an enraged group of French tailors who burnt down his garment factory because they feared unemployment as a result of his new invention.
- In 1846, the first American patent was issued to Elias Howe for "a process that used thread from two different sources." Howe's machine had a needle with an eye at the point. The needle was pushed through the cloth and created a loop on the other side; a shuttle on a track then slipped the second thread through the loop, creating what is called the lockstitch.

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# How to develop your Creativity



- When you concentrate on a problem and think hard about it, a mental lens is set up in your mind so that whatever you read and experience will go through that **mental lens**. You will discover new relations relevant to the problem you concentrate on.

# How to develop your Creativity



- Different Type of Relations
  - Emotional (Existential)
  - Rational (Logical)
  - Philosophical (Holistic)
- For different types of creativity, different types of relations will become useful.

# How to develop your Creativity



- An Example
- Analyze the responses to the following blog article into the three types of relations: emotional, rational and philosophical.
- <http://blog.chinatimes.com/Xletter/archive/2005/10/21/21010.html>

# How to develop your Creativity



- Tools for Developing Creativity
  - The Global Brain:** Internet, Blog, Wikipdedia
  - The Local Brain:** Brain storming, War games
  - The Individual Brain:** Eating, Drinking, Playing, Exercising, Sleeping and Dreaming

# How to develop your Creativity



- Tools for Developing Creativity (continued)
  - Linear Thinking:** Scenario-based design, Role playing, Imitation
  - Nonlinear Thinking:** Jump, Twist, Negation, Reverse Thinking
  - Intuitive Thinking:** Stroke of genius, Divine Will

# How to develop your Creativity



- Tips on Enhancing Creativity

These are the little tricks I practice myself. They may also be helpful to you.

- Always keep a notepad around to write down your thoughts. Even at night, I will write down what I remember from my dreams.



# How to develop your Creativity



- Tips on Enhancing Creativity (continued)
  - Always keep the computer handy so that you can enter more well-developed thoughts from your notepad. I will put them into html pages, so that I can flip through them just like index cards. Some people would use powerpoint.
  - Whenever feasible, get on the Internet to do a search to find related ideas. You will be surprised how much you may discover using google in a very short period of time.

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# How to develop your Creativity



- Tips on Enhancing Creativity (continued)
  - Newspapers and magazines offer important clues. The reporters usually are talking about a different subject. But an experienced person can make good use of the information and relate it to what he or she is working on.
  - Remember Thomas Edison's dictum: *To invent, you need a good imagination and a pile of junk.* (story of Marvin Camras) Junk may mean failed attempts. But junk may also be put together to form new structures.

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# Life Style of Creative People: the Time Warp



- Creative people tend to work
  - long hours
  - flexible hours
- Creative work is time-consuming and stressful
- Flexibility and interweaving in time management
- Front-loaded career (career first, live later)
- The deferred life (late in marriage and child bearing)

# Life Style of Creative People: the Slow Dance



- Life should be like Argentine Tango – the Slower the Better
- The creative life need not be a hurried life
- The creative life can be a meaningful life
- Meaningful life dictates purposeful creation in harmony with one's inner self