Vision North Texas
Seven Transition Waves

Footloose Strategic Industries + Preserving Clusters
+Observations on the Credit Crisis

Michael Buckley, UTA Visiting Professor
The Next Generation
Seven Transition Waves

1. Business Consolidation + Mergers
2. Capital Markets Re-Alignment
3. Demographic Shifts
4. Evolving Globalization
5. Electronic Commerce
6. The Technology Wave
7. Urban High Density vs Suburban
Prediction is very Hard
--- Especially when it’s about the Future

The Immortal Yogi Berra
#1—Business Consolidation and Mergers

**Manufacturing** -- Largest 1% Own 90% Total Assets

**Banks + Pharma** --- Scorecards needed

**Wholesale / Retail** --- 2% control 50% of all Assets and Net Income

**Real Estate Operating Co’s** --- Seeking USA + Global Competitive Edge & Capacity

**Merger Drivers** --- Strengthened Balance Sheet + Access to Public & Institutional Capital Sources

**Scalar Leverage** ---- Expensive Info Systems + Staff
#2--Demographic Shifts

USA Pop Increase 1995-2020 ~ 60 Million

--same as 1969-1994 period of immense urban growth and development

--80% of absolute growth will be in Minority groups

--by 2020 45% under 18 will be of a Minority group

--Specialized product design + marketing and financing will be required
Immigration Will Drive 21st Century Growth

The National Academy of Sciences forecasts that at its present level, immigration will account for \textit{two-thirds of projected population growth} in the 21st century.

The U.S. population will increase from 263 million in 1995 to 387 million in 2050, an increase of 124 million. Immigrants and their descendants will account for 80 million of this increase.
Swiftly Changing Demographics

40 Million new Americans by 2020
Knowledge Workers most Desired

80% of absolute growth in Minorities and Immigration
20-40% of those below 30 yrs old will be Hispanic

Pressure on City Centers, Edge Cities, and Suburban Towns
Competition for the Best and Brightest – The Creative Class
New Mantra – Credibility, Viability, Livability
Demographics ---- Embedded Opportunities

The Boomers create demand. Opportunity is Deep. Together there is an opportunity of +$90B of NEW UNITS by 2030 in Central Cities w/in Metro Areas.
Current Hispanic Population

Source: Census 2000 analyzed by the Social Science Data Analysis Network (SSDAN) and published on CensusScope.org
Note: The US Census defines White as “White alone, not Hispanic” and Hispanic as “Hispanic, of any race.”
Source: US Census Bureau, 2004, “U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin”
## Projected US Hispanic Population Increase By State: 2005-2025

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<td>California</td>
<td>12,268,000</td>
<td>16,411,000</td>
<td>21,232,000</td>
<td>8,964,000 73.1%</td>
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<tr>
<td>Texas</td>
<td>6,624,000</td>
<td>8,294,000</td>
<td>10,230,000</td>
<td>3,606,000 54.4%</td>
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<tr>
<td>Florida</td>
<td>2,845,000</td>
<td>3,828,000</td>
<td>4,944,000</td>
<td>2,099,000 73.8%</td>
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<tr>
<td>New York</td>
<td>3,071,000</td>
<td>3,664,000</td>
<td>4,309,000</td>
<td>1,238,000 40.3%</td>
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<tr>
<td>Illinois</td>
<td>1,450,000</td>
<td>1,840,000</td>
<td>2,275,000</td>
<td>825,000 56.9%</td>
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<tr>
<td>Arizona</td>
<td>1,269,000</td>
<td>1,641,000</td>
<td>2,065,000</td>
<td>796,000 62.7%</td>
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<td>New Jersey</td>
<td>1,196,000</td>
<td>1,513,000</td>
<td>1,861,000</td>
<td>665,000 55.6%</td>
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<tr>
<td>New Mexico</td>
<td>821,000</td>
<td>1,011,000</td>
<td>1,241,000</td>
<td>420,000 51.2%</td>
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<tr>
<td>Massachusetts</td>
<td>524,000</td>
<td>719,000</td>
<td>934,000</td>
<td>410,000 78.2%</td>
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<tr>
<td>Colorado</td>
<td>682,000</td>
<td>859,000</td>
<td>1,067,000</td>
<td>385,000 56.5%</td>
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<tr>
<td>Washington</td>
<td>437,000</td>
<td>605,000</td>
<td>797,000</td>
<td>360,000 82.4%</td>
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<tr>
<td>Pennsylvania</td>
<td>391,000</td>
<td>507,000</td>
<td>639,000</td>
<td>248,000 63.4%</td>
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<tr>
<td>Connecticut</td>
<td>332,000</td>
<td>447,000</td>
<td>574,000</td>
<td>242,000 72.9%</td>
</tr>
<tr>
<td>Nevada</td>
<td>350,000</td>
<td>460,000</td>
<td>583,000</td>
<td>233,000 66.6%</td>
</tr>
<tr>
<td>Virginia</td>
<td>322,000</td>
<td>429,000</td>
<td>538,000</td>
<td>216,000 67.1%</td>
</tr>
</tbody>
</table>

**Total: States with Hispanic Growth over 200,000** 20,707,000 90.6%

*Note: The US Census defines White as “White alone, not Hispanic” and Hispanic as “Hispanic, of any race.”
Source: US Census Bureau, 2004, “U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin”*
Challenge For Policymakers & Homebuilders

Create land use and regulatory climate to accommodate Hispanic population growth in more sustainable high density

Hispanic New Urbanism
Find the cultural and design preferences of Hispanic homebuyers and meld them into urban forms
Unprecedented Opportunity
Home Purchasing Capacity For Average Hispanic Family in 2020 will be $150,000 considering 5% down
In 2020, there will be 20,229,468 Hispanic households
If 1% of those households purchase a new home during that year, there will be a $33 Billion opportunity!

Pay attention to the Hispanic voice
Over-Reliance on Public Market Take-Outs

Global Portfolio-Scale Financings--CMBS

Increased Appetite for Research

Push for Transparency and Standards

Rise of Derivatives + Hedging ---CDS

Broad Pension Fund Participation
How Low Can it Go?
Financial Times

2008

Structured financial edifice cannot be put together again

From Mr Raja Iyer.

Sir, Your front-page lead story “Big banks in push to scale back business” (August 7) made amusing reading. The same institutions that created the mess through irresponsible lending and spurious risk management practices are now promising to behave themselves. Presumably they will do so until they drive themselves into the next mess in their quest for short-term gains and larger pay-offs.

The Humpty Dumpty of structured finance has well and truly fallen off the wall; all of Wall Street’s men and all the absentee regulators will not be able to put it together again.

Raja Iyer,
Harpenden, Herts AL5 2PE, UK

All Wall Street’s men can’t mend it
Credit Crisis

Blackstone, Credit Crisis

By Cassell Byrnes-Low and Peter Lattman

Two of the world’s biggest so-called alternative investment firms, private-equity giant Blackstone Group LP and hedge fund GLG Partners Inc., announced quarterly results Wednesday, reporting sharply lower revenue and profit. The companies, which have been at the center of the credit crisis, have been hit hard by the downturn in the global economy.

Blackstone reported a net loss of $21.9 billion in the second quarter, compared with a profit of $7.9 billion in the same period last year. The company said it had net assets of $60.2 billion, down from $72.8 billion at the end of the first quarter.

GLG Partners said it had a loss of $1.7 billion in the second quarter, compared with a profit of $2.6 billion a year earlier. The company had net assets of $35.5 billion, down from $41.2 billion at the end of the first quarter.

The credit crisis continues to weigh on the financial industry, with many banks and other financial institutions struggling to repay their loans. The crisis has led to a wave of bankruptcies and mergers and acquisitions, as companies seek to reduce their debt and strengthen their balance sheets.

Ambac Terminates Citigroup CDO Deal

By Lavonne Kuykenwold and Sandra Ng

Bond insurer Ambac Financial Group Inc. said it would terminate a guarantee contract tied to a $1.6 billion CDO called CDO 2006-5, which is in troubled mortgage-related securities.

The move was expected to be good news for Citigroup Inc., the lead underwriter on the CDO, as Ambac’s decision to drop the guarantee will allow the bank to get out of a potentially risky position.

Citigroup had been in talks with Ambac about the guarantee, which had been a source of concern for investors. The CDO has been struggling since its issuance in 2006, and Ambac had been pressuring Citigroup to find a solution.

The move could be a sign that the credit crisis is easing, as companies are willing to take on more risk and engage in deals that were once considered too risky. However, it remains to be seen whether this will be a lasting trend, as the global economy continues to struggle.

The Big Freeze will not make a difference by economic hardship

The Big Freeze, a new term coined by economists, refers to a period of economic slowdown and recession that occurs when the central bank raises interest rates to combat inflation. This can have a negative impact on the economy, as higher interest rates make it more expensive for businesses and consumers to borrow money.

However, some economists believe that the Big Freeze will be temporary and that the economy will eventually recover. They argue that the central bank has too much power and that the impact of higher interest rates can be mitigated by other measures, such as government spending and tax cuts.

In the meantime, many countries are experiencing a credit crunch, which is characterized by a severe shortage of credit and rising interest rates. This can make it difficult for businesses and consumers to get loans, leading to a slowdown in economic activity.

For banks, the credit crunch does not have to be as severe as it has been in recent years. In fact, many banks have already started to relax their lending standards, which could help to stimulate the economy.

In conclusion, while the credit crunch and the Big Freeze are two separate phenomena, they are both caused by the same underlying economic issues. By working together, governments, central banks, and other financial institutions can help to mitigate the impact of these crises on the economy.
Credit Crisis

The Wall Street Journal

U.S. NEWS

Fannie Mae Loss of $2.3 Billion Exceeds Forecasts

Credit Crisis

Credit Crisis

Credit Crisis

Credit Crisis

Credit Crisis

Credit Crisis
How a local squall might become a global tempest

Niall Ferguson

The phrase "perfect storm" has been invoked over the often used term in financial circles. Yet the true perfect storm may not actually be abroad the high seas. What is happening now is that the perfect storm was actually the perfect storm was caused by the convergence of a number of financial crisis events in the past few months. One of the most significant was the collapse of Lehman Brothers, which has been described as a "death knell" for the US financial system. The collapse of Lehman Brothers led to a run on other US banks, which has been described as a "run on banks." The run on banks has led to a collapse of confidence in the banking system and has sent shockwaves throughout the financial system. The result has been a full-scale recession. This has been further compounded by the collapse of the housing market and the rise in mortgage rates. The collapse of the housing market has led to a decline in consumer spending, which has further exacerbated the recession. As a result, the economy is in a state of contraction, with a significant decline in GDP.

Now a new and colder front is crossing the macroeconomic weather map: the prospect of a global slowdown. The US economy is no longer the only one feeling the effects of the global downturn. Other economies, such as those in Europe and Asia, are also feeling the impact. The US is the world's largest economy and has a significant impact on the global economy. Any decline in the US economy has a ripple effect on other economies around the world. The decline in consumer spending has led to a decline in production and employment, which has further exacerbated the downturn. The result has been a significant decline in GDP, which is expected to continue for some time. As a result, the world is facing a significant economic downturn. The question is whether or not this downturn will be short-lived or whether it will be a long-term trend. The answer is not clear, but the outlook is not promising.
Real Estate Drivers

1. Tenants/Users Drive Developers—Large Tenants / End Users are Corporates
2. Developers Drive Urban Development—Many Developers now public companies
3. Capital Availability Drives Development—Public Market Sources have Predominated
4. Capital Availability Driven by Return Rates—ROI—ROE—EBITDA
#4 -- Evolving Globalization

Worldwide Telcom + Mfr + Hi-Tech + Pharma
Indo/Asian Growth + China’s GDP Velocity
Cyclical Latin American Performance
Russia’s “Crazy Ivan” Economics
Euro = New Economic “Pax Europa”

“CityStates” — Globally-oriented USA Gateways
+ NYC + Wash DC + Boston + Chicago + MIA
+ DFW + HOU + LA + SFO + SEA
Economic Competitiveness Indexes

II. 5 Year GDP Projection by Country

Source: EIU (Economist Intelligent Unit)
Technology enables companies to site functions globally, based on relative importance of site selection factors.

<table>
<thead>
<tr>
<th>Location</th>
<th>Workforce</th>
<th>Quality of Life</th>
<th>Business Environment</th>
<th>Cost</th>
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<tbody>
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<td>Headquarters</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>1</td>
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<td>R &amp; D and Technology</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Administrative/Customer Care</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>5</td>
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<tr>
<td>Capital Intensive Production</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Labor Intensive Production</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>5</td>
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**Important** | **Unimportant**

*CBRE Dan Malachuk*
Economic Competitiveness Indexes

IV. Business Startup

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<thead>
<tr>
<th>Country</th>
<th># of Procedure</th>
<th>Time to Setup (days)</th>
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<td>5</td>
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<td>Hungary</td>
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<tr>
<td>Czech Republic</td>
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<td>Ireland (Dublin)</td>
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<td>UAE (Dubai)</td>
<td>12</td>
<td>54</td>
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<tr>
<td>India (Mumbai)</td>
<td>11</td>
<td>89</td>
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<tr>
<td>Hong Kong</td>
<td>5</td>
<td>11</td>
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<tr>
<td>Singapore</td>
<td>7</td>
<td>8</td>
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<tr>
<td>China (Shanghai, Beijing)</td>
<td>12</td>
<td>41</td>
</tr>
<tr>
<td>Korea (NSC)</td>
<td>12</td>
<td>22</td>
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</table>

(Source: World Bank)
When it comes to establishing a regional hub for your business, global HQ, distribution center or R&D facility, nobody expedites the process like Singapore. Things happen here. Quickly, efficiently, transparently. While others still have you filling out forms, or awaiting seals of approval, we roll out the red carpet. And have you up and running. In fact, you can even register your business online, in 15 minutes flat. You see, we believe the simplest way to do something should be precisely that. Simple.
Economic Competitiveness Indexes

### III. COL (Cost of Living) & OC (Occupancy Cost)

Source: EIU (Economist Intelligent Unit)
You Can Observe a Lot by just Watching

The Immortal Yogi Berra
# Location Factors

## QUALITY OF LIFE
- **Local Environment**
  - Schools – Primary - University
  - Medical/Healthcare Services
  - Cultural/ Learning Environment
  - Perceptions of Security
  - Housing Availability + Choice
  - Cost of Living
  - Retail and Foodservice Choices
  - Quality of Landscape/Open Space
  - Architectural Character
  - Climate Quality
  - Regional Accessibility
  - Transportation Systems
  - Recreational Offerings

## BUSINESS DRIVERS
- **Human Resources**
  - Skill Sets + Availability
  - Educational Base
  - Political Stability
  - Recruiting/Retention

- **Operating Environment**
  - Market Size/Share
  - Utilities, Telecomm, Energy Costs
  - Transp / Distrib Channels
  - Political Risks

- **Business Costs**
  - Labor Cost + Reliability
  - Corporate Taxation
  - Business Charter Complexity
  - Legal System
  - Real Estate Costs

## STRATEGIC FACTORS
- **Basics**
  - QOL measures
  - University R&D Linkages
  - Labor Skill Sets
  - Recruiting/Retention

- **Enterprise level**
  - Exploitable Market Niche
  - Targeted Legislation + Incentives
  - Development Incentives
  - Intellectual Property Rights
  - Target Market

- **Proximity**
  - Transportation Network
  - Distribution Costs
Global Development Incentives Study [GDIS]

Incentive Comparison – GlobalTech --- a Hypothetical Enterprise

GlobalTech Dev Corp Tax Burden

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<th>Location</th>
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Cumulative Tax Amortization (US Millions $) vs. Year (YR)
# 5 -- Electronic Commerce

Growing role of Information Technology changes Lifestyles--Cyberspace impacts real space

Online offers Comparison Pricing

Hyper-Competitive “Bundle Buying”

Google It

Online Advertising causes MediaPub nightmare

Crackberry + I-Pod + I-Phone Revolution

TV Screen is the Store---Less Reliance on Location-Based Retail- - -More on Warehouse and Rapid Delivery
Short History of the Web

1945 -- MIT’s Vannevar Bush describes Memex in Atlantic Monthly to link Microfiches

1968 ---Stanford Research Institute’s Doug Ingelhardt demos oNLine System (NSL) incl Hypertext Browsing, editing + email. To enable, he invents the Mouse

1980---Tim Berners-Lee at CERN writes software to link electronic documents

1990---Berners-Lee dubs his global hypertext program “Worldwide Web”

Number of Websites: **One.**

1993---Marc Andersen releases Mosaic Web Browser, the basis for Netscape

1994 ---World Wide Web Consortium (W3C) founded at MIT

number of Websites reaches **10,000.** Berners –Lee presents Semantic Web

1998 ---MIT’s W3C releases eXtensible Mark-up Language –XML

2000 ---**25,675,581** Websites have been identified

2000 --- Vice President Al Gore claims Web authorship

2004 ---Semantic Web Standards finalized. **Queen Elizabeth knights Berners –Lee**

2004 ---Google IPO --- $$$ Stratospheric $$$

2008 – Cyber Attack on Estonia

2009 – **300,000,000** on Facebook

*UTA --- Architect as Developer*
# 6 -- The Technology Wave

Nerd Heaven -- M.I.T PhD M.O.N.E.Y

Gene Therapy + Bio-Tech Industry = promise of Exponential growth

Nano Tech --- Microscopic Machinery

Self Assembling + Intelligent Programs

All Optical + Wireless Networks + Artificial Intelligence = Ubiquitous Computing and Communications

Interactive Graphics + Virtual Reality = Marketing Revolution
2008 MIT’s Top Ten Emerging Technologies

- **Celluloytic Enzymes** — efficiently breaking down Cellulose for Alternative BioFuels
- **Reality Mining** — Cell Phone data-mining algorithms trailing “digital bread-crumbs”
- **Connectomics** — brain-mapping all synaptic connections between Neurons
- **Graphene Transistors** — Carbon Transistors one atom thick ultra high-speed chips
- **Atomic Magnetometers** — Miniature Rice grains sensors as portable MRI machines
- **Wireless Power** — Magnetic Resonant Coupling devices for recharging apps
- **NanoRadios** — tiny single molecule receivers to allow Tiny Device communicators
- **Probalistic Chips** — trading small degrees of Computational Accuracy for energy
- **Modeling Surprise** — combining Data Mining and Machine Learning to anticipate
- **Offline Web Applications** — Cloud Computing --- Web-Based + User’s computer
<table>
<thead>
<tr>
<th>Science Cities Development Comparison</th>
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</thead>
<tbody>
<tr>
<td><strong>Mission statement</strong></td>
</tr>
<tr>
<td>Singapore Biopolis</td>
</tr>
<tr>
<td>Create new world-class biomedical sciences research hub for Asia.</td>
</tr>
<tr>
<td>Seoul Digital Media City</td>
</tr>
<tr>
<td>Become world production center for digital media content in North East Asia.</td>
</tr>
<tr>
<td>Tskuba Science City</td>
</tr>
<tr>
<td>Become Japan's center of advanced research relocated from overcrowded Tokyo.</td>
</tr>
<tr>
<td>Hong Kong Cyberport</td>
</tr>
<tr>
<td>Establish leading information technology hub of the Asia-Pacific region.</td>
</tr>
<tr>
<td>MIT University Park</td>
</tr>
<tr>
<td>Enhance technology transfer between MIT university and High Tech industry</td>
</tr>
<tr>
<td><strong>Strategic Industry Focus</strong></td>
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<tr>
<td>Singapore Biopolis</td>
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<tr>
<td>Biomedical R&amp;D in an environment that fosters collaborative culture</td>
</tr>
<tr>
<td>Seoul Digital Media City</td>
</tr>
<tr>
<td>Media and entertainment industries, cultural contents providers of broadcasting</td>
</tr>
<tr>
<td>Tskuba Science City</td>
</tr>
<tr>
<td>Research &amp; educational institutes.</td>
</tr>
<tr>
<td>Hong Kong Cyberport</td>
</tr>
<tr>
<td>Focuses on IT, Information services (IS) and multi-media content creation.</td>
</tr>
<tr>
<td>MIT University Park</td>
</tr>
<tr>
<td>Institutes, R&amp;D, Manufacturing</td>
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<tr>
<td><strong>University Linkage</strong></td>
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<tr>
<td>National University of Singapore</td>
</tr>
<tr>
<td>Korea Institute of Science and Technology and the University of Seoul</td>
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<tr>
<td>University of Tsukuba</td>
</tr>
<tr>
<td>MIT + Boston University + New England Medical Center</td>
</tr>
<tr>
<td><strong>Land in acres</strong></td>
</tr>
<tr>
<td>Singapore Biopolis</td>
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<tr>
<td>9.90</td>
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<tr>
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<td>1,477,850</td>
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<td>MIT University Park</td>
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<td>2,300,000</td>
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<td><strong>Density</strong></td>
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<td>0.58</td>
</tr>
<tr>
<td>Tskuba Science City</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td>Hong Kong Cyberport</td>
</tr>
<tr>
<td>0.57</td>
</tr>
<tr>
<td>MIT University Park</td>
</tr>
<tr>
<td>1.96</td>
</tr>
<tr>
<td><strong>Major Land Uses</strong></td>
</tr>
<tr>
<td>Singapore Biopolis</td>
</tr>
<tr>
<td>62% - public research institutes, 19% - laboratory area, 11% - office area, 3% - retail, 6% - utilities, 850 parking spaces</td>
</tr>
<tr>
<td>Seoul Digital Media City</td>
</tr>
<tr>
<td>64% - office, 9% - Residential-retail mixed use, 9% - Retail, 7% - hotel, 7% - foreign school, 2% - parking.</td>
</tr>
<tr>
<td>Tskuba Science City</td>
</tr>
<tr>
<td>54.3% - Research and education, 24.7% - Private housings, 16.7% - Public utilities, 3.4% - Community facilities, 0.9% - Business-residence facilities</td>
</tr>
<tr>
<td>Hong Kong Cyberport</td>
</tr>
<tr>
<td>73.3% Office, 20% Retail, 1.5% Service annex, 5.2% Hotel</td>
</tr>
<tr>
<td>MIT University Park</td>
</tr>
<tr>
<td>Research and Development office, Residential Hotel, Restaurant, Retail Parking</td>
</tr>
<tr>
<td><strong>Development Timeline</strong></td>
</tr>
<tr>
<td>Singapore Biopolis</td>
</tr>
<tr>
<td>2001 - 2004 (substantially completed)</td>
</tr>
<tr>
<td>Seoul Digital Media City</td>
</tr>
<tr>
<td>2002 - 2010 expected</td>
</tr>
<tr>
<td>Tskuba Science City</td>
</tr>
<tr>
<td>1966 - 1980 (substantially completed)</td>
</tr>
<tr>
<td>Hong Kong Cyberport</td>
</tr>
<tr>
<td>2000 to 2004 (substantially complete)</td>
</tr>
<tr>
<td>MIT University Park</td>
</tr>
<tr>
<td>1983 to 2003</td>
</tr>
<tr>
<td><strong>Architectural Quality</strong></td>
</tr>
<tr>
<td>Singapore Biopolis</td>
</tr>
<tr>
<td>Modern-style and high-end</td>
</tr>
<tr>
<td>Seoul Digital Media City</td>
</tr>
<tr>
<td>Landmark Development</td>
</tr>
<tr>
<td>Tskuba Science City</td>
</tr>
<tr>
<td>Modern design with minimal complexity.</td>
</tr>
<tr>
<td>Hong Kong Cyberport</td>
</tr>
<tr>
<td>Modern architecture with Green emphasis</td>
</tr>
<tr>
<td>MIT University Park</td>
</tr>
<tr>
<td>Winner of Progressive Architecture's Urban design.</td>
</tr>
<tr>
<td><strong>Transit Links</strong></td>
</tr>
<tr>
<td>Singapore Biopolis</td>
</tr>
<tr>
<td>MRT Station with free connecting shuttles</td>
</tr>
<tr>
<td>Seoul Digital Media City</td>
</tr>
<tr>
<td>3 subway stations, buses, one of two arteries along the Han River.</td>
</tr>
<tr>
<td>Tskuba Science City</td>
</tr>
<tr>
<td>JR stations, Tsukuba Express Line.</td>
</tr>
<tr>
<td>Hong Kong Cyberport</td>
</tr>
<tr>
<td>Buses, mini-buses and taxis.</td>
</tr>
<tr>
<td>MIT University Park</td>
</tr>
<tr>
<td>Buses, bikes, or subways, and shuttle service (Ezride)</td>
</tr>
<tr>
<td><strong>Employment</strong></td>
</tr>
<tr>
<td>Singapore Biopolis</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td>Seoul Digital Media City</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td>Tskuba Science City</td>
</tr>
<tr>
<td>26,000</td>
</tr>
<tr>
<td>Hong Kong Cyberport</td>
</tr>
<tr>
<td>10,000</td>
</tr>
<tr>
<td>MIT University Park</td>
</tr>
<tr>
<td>9,780</td>
</tr>
<tr>
<td><strong>Government support</strong></td>
</tr>
<tr>
<td>Singapore Biopolis</td>
</tr>
<tr>
<td>Financial incentives, Growth and Grants</td>
</tr>
<tr>
<td>Seoul Digital Media City</td>
</tr>
<tr>
<td>Free economy zone, lower office and residential rent</td>
</tr>
<tr>
<td>Tskuba Science City</td>
</tr>
<tr>
<td>Strongly promoted by the government.</td>
</tr>
<tr>
<td>Hong Kong Cyberport</td>
</tr>
<tr>
<td>No special incentives.</td>
</tr>
<tr>
<td>MIT University Park</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td><strong>Amenities</strong></td>
</tr>
<tr>
<td>Singapore Biopolis</td>
</tr>
<tr>
<td>Retail shops, restaurants, cafe, food court, pubs, childcare center, auditoriums, lecture theaters, meeting rooms</td>
</tr>
<tr>
<td>Seoul Digital Media City</td>
</tr>
<tr>
<td>Wireless communication, parks, Han River, public golf course</td>
</tr>
<tr>
<td>Tskuba Science City</td>
</tr>
<tr>
<td>Hotel, Public Hall, Shopping center, restaurants, culture center, hospital, expo center.</td>
</tr>
<tr>
<td>Hong Kong Cyberport</td>
</tr>
<tr>
<td>Retail, Entertainment, Hotel, restaurants, Bauhinia Garden, Recreational facilities, Digital Media Center, video conferencing</td>
</tr>
<tr>
<td>MIT University Park</td>
</tr>
<tr>
<td>Campus setting, Hotel, Dining and entertainment, large grocery store, retail shops, banking, childcare, arts programs</td>
</tr>
</tbody>
</table>
San Juan Knowledge Corridor BioScience Strategy

ONE QUARTER OF ALL PHARMA PRODUCTS SHIPPED WORLD-WIDE ARE MANUFACTURED IN PUERTO RICO

RESEARCH

LIFESTYLE

CULTURE

NATURE

EDUCATION

COLUMBIA UNIVERSITY
MSc Real Estate Development
Center for High Density Development
Link Centro Medico to Science City
SCIENCE CITY FINANCING

- BIG IDEA: PRIVATE SECTOR LAND SALES DRIVE SCIENCE AGENDA

- SCIENCE TRUST TO FUNCTION AS MASTER DEVELOPER

- FUNDING BY BONDING REVENUES FROM LAND SALES

- PROCEEDS SUBJECT TO CREDIT RATING + ENHANCEMENTS + GUARANTEES

SCIENCE ISSUES

CHANGE PARADIGM FROM PROFIT SHELTERING INCENTIVES TO CORPORATE COST REDUCTION
#7 -- Urban vs Suburban Evolving Policy Conflicts

Widespread Debates on Cost of Sprawl

QOL Objectives Predominate

Return of Urban “Lifestyle” Residential + Mixed-Use --efficient Use of costly Land

Neo-Traditional “Village-Style” Centers

Politics of Educational & Cultural Resource Allocations and Infrastructure
Nobody Goes there Anymore
–It’s too Crowded

The Immortal Yogi Berra
Columbia University Center For High Density Development

New Research to Quantify Financial, Operational, Workplace and Societal Advantages of Density

Turbulent Debate on Urban Sprawl

No real understanding of Metrics
---Pace of Sprawl vs Fiscal Impact

Poor Imaging Techniques for Visualizing
---Perceptions vs Best Practices
---Architectural Quality Comparisons

Common Recognition of Issues
UTA --- Architect as Developer
THE OPPORTUNITY
Richard Dropper '08 & Dominick Tanhumberg '08

Current metrics for quantifying density, unlike per acre or people per square mile, are highly incremental methods for analysis.

- The Occupied Density Index (ODI) is a standard metric that enables investors to compare densities in different areas.
- ODI is an analytical tool for investment decisions used alongside traditional measures of vacancy, absorption and rental rates.
- The ODI works in a similar fashion to Floor Area Ratio (FAR) metrics, which are common in zoning ordinances around the country.

ODI DEFINITION & RESEARCH METHODOLOGY

- The ODI calculates comparisons of density.
- Office inventory of a specific area is multiplied by the appropriate Occupancy rate to derive the Total Occupied Inventory.
- The Occupied Inventory is divided by the total square footage (surface area) of the “study zone” to arrive at the ODI.

Inventory per Occupancy = Occupied Density Index (ODI)

ODI metrics were calculated using Cushman & Wakefield data on office inventory and occupancy for specific U.S. CBDs.

- Twelve CBDs representative of both high and low density were studied: Midtown & Lower Manhattan NYC, San Francisco, Boston, Chicago, Seattle, Houston, Dallas, Hartford, Miami, Atlanta.

ODI metrics were calculated using Cushman & Wakefield data on office inventory and occupancy for specific U.S. CBDs.

- Twelve CBDs representative of both high and low density were studied: Midtown & Lower Manhattan NYC, San Francisco, Boston, Chicago, Seattle, Houston, Dallas, Hartford, Miami, Atlanta.

SDI Comparison 2000 - 2007

- Micro Analysis:
  - The period from 2000 to 2007 was analyzed to capture a full real estate cycle and ensure data consistency.
  - For each CBD, correlation coefficients were used to predict changes in real estate values.

ODI vs. RENTS

- The period from 2000 to 2007 was analyzed to capture a full real estate cycle and ensure data consistency.
- Correlation coefficients were used to predict changes in real estate values.

The ODI enables investors and developers to measure the density of a specific area and to compare it with densities in others. ODI Research facilitates the link between Demand and Sales Value:

- High density areas command greater rental rates and sales prices.
- High density areas maintain stable rental prices through economic downturns compared to equivalent low density areas.

Correlation between Urban Density & Cultural Intensity

- Mathieu Scangier '08, assisted by Brooke Clevley '08, Michael Horton '08, Jason Rogers '08

Density enables interaction between artists, venues and audiences - thus increasing potential for cultural interaction. Intuitively more vibrant culture is found in dense urban environments, but this fact has never been quantified. We believe this is true for the success of cities in the new creative economy, and hence this effort to demonstrate that cultural and artistic institutions are products of urban density.

IS DENSITY CORRELATED TO CULTURE?

Our research demonstrates that dense environments tend to generate a more intense cultural milieu. The answer may seem obvious, but our research reveals that dense environments sustain originality and ingenuity.

It is fundamental for developers and urban planners to understand the cultural aspects of density. Density that makes cities livable, projects feasible, and culture possible. However, very little research has been done to prove Cultural Density. Some scholars worked on the relationship between Cities & Creative (Richard Florida) and others worked on growth models with different weights of Capital (Robert Solow). But none tried to link the rise in of new cultural trends with density.

FINDINGS

Results demonstrate a strong correlation between Density and the number of cultural events. Correlation analysis established an index of 0.95, 0.98, 0.94 and 0.97. As demonstrated on the Table, we obtained a correlation of 0.95 - which linked to the number of listed musical events.

The findings demonstrate that Density enables interaction between artists, venues and audiences - thereby increasing the potential for Cultural interaction. Therefore, Dense cities offer more entertainment opportunities and are well positioned to attract Creative professionals.

ALTERNATIVE MUSIC SURVEY, NIGHT 1

- Number of events based on MySpace, per 100,000 people, per square mile, per week until Friday, August 9, 2008.

- Number of events based on MySpace, per 100,000 people, per square mile, per week until Friday, August 9, 2008.
GLOBALIZATION AND MEGA MIXED-USE
Mega Mixed-Use is defined as a super-large project or new district in which one Master Developer or City Agency has the primary role for planning and development. These projects typically are among the largest in the host region and include multiple uses of Office, Residential, Retail and Lodging. These projects also support significant new Open Space and high-quality iconic architectural statements.

MIXED DEVELOPMENT ISSUES
Mixed Use requires deep planning, as the various land use adjacencies each have differing physical configuration attributes, and must satisfy specific user requirements. This can result in site layout and design solutions with the following issues typically found:

Master Developer Alternatives
- Assignment of Master Developer Fee per parcel
- Common Area Maintenance costs by Land-Use
- Promotion and Management costs
- Availability of Off-Site Services + Parking

Planning Decision Period
- Undeveloped sites prompt Redevelopment
- Extensive Public/Private efforts required to Assemble
- Multi-year Public discussions and Master Planning
- Public process to obtain Development Approvals
- Quality Design subject to Cost / Public review
- Complete Financing involves expensive Infrastructure

Matching Public Goals
- Public desire for high-profile iconic Architecture
- City desire for significant Cost Duffering Spaces
- Continuity over Private Operational Control
- Quality Events / Activities to project Image

MIXED Design / Layout Issues
- Separate Users require Parcels
- Both Common and Private User Access
- Focus on imaginative Public Spaces
- Clear Servicing + Parking access
- Flexible Utility Systems + Sustainability
- Pedestrian Circulation focused on Retail

Road Net

BUILDERS DEPARTMENT
Developers must exhibit special capabilities to undertake Mega MIXD projects. Developers are naturally limited as the Barnett to Entry due to scale, complexity and duration include:

- Sophisticated and quality-oriented Design Management to maximize productivity of Urban Planners and Architects
- Familiarity with market attributes of very large buildings and districts including Open Spaces, Cost Pluses and Subsidies
- Ability to work with Government - Skills in Approval Process, and Management focused on Stakeholders and Civic Leadership
- Ability to deploy large teams of Technical Consultants from Design & Engineering to Legal and Marketing
- Understanding Public/Private Partnerships and complexities of managing through successive Political cycles

www.arch.columbia.edu/realstate

UTA --- Architect as Developer
UTA --- Architect as Developer
High Densities and Clusters

- Where Clusters exist → land values rise
- Clusters → better places to live & work
- Clusters drive local economies
Density Drives Clustering → Increased Office Sales $/SF in CBDs

National CBD Average: $218/SF
Value premiums exist both for cities hosting industry clusters and for higher densities...

<table>
<thead>
<tr>
<th></th>
<th>Cluster Host Cities</th>
<th>Cities w/o Clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBD Cap Rates</td>
<td>6.85%</td>
<td>7.82%</td>
</tr>
<tr>
<td>Suburban Cap Rates</td>
<td>7.43%</td>
<td>7.90%</td>
</tr>
<tr>
<td>CBD PPF</td>
<td>$269</td>
<td>$177</td>
</tr>
<tr>
<td>Suburban PPF</td>
<td>$192</td>
<td>$152</td>
</tr>
</tbody>
</table>
High Density Works.....
For the Workplace
High Density Decision Drivers

Factors Contributing to Decision for Location in High Density Environments:
(1 not at all, 5 very much so)

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>N/A</th>
<th>&gt;4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shorter travel time to customers</td>
<td>9%</td>
<td>18%</td>
<td>18%</td>
<td>23%</td>
<td>27%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Proximity to Customers</td>
<td>18%</td>
<td>32%</td>
<td>14%</td>
<td>23%</td>
<td>9%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Proximity to Market Trends and News</td>
<td>5%</td>
<td>27%</td>
<td>14%</td>
<td>27%</td>
<td>23%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Ease of Client Access</td>
<td>5%</td>
<td>0%</td>
<td>14%</td>
<td>36%</td>
<td>41%</td>
<td>5%</td>
<td>77%</td>
</tr>
<tr>
<td>Improved Employee Communication</td>
<td>0%</td>
<td>5%</td>
<td>18%</td>
<td>36%</td>
<td>36%</td>
<td>5%</td>
<td>72%</td>
</tr>
<tr>
<td>Skilled Workforce</td>
<td>0%</td>
<td>5%</td>
<td>0%</td>
<td>41%</td>
<td>50%</td>
<td>5%</td>
<td>91%</td>
</tr>
<tr>
<td>Diverse Workforce</td>
<td>5%</td>
<td>14%</td>
<td>9%</td>
<td>36%</td>
<td>32%</td>
<td>5%</td>
<td>68%</td>
</tr>
<tr>
<td>Universities/Recruiting</td>
<td>5%</td>
<td>23%</td>
<td>23%</td>
<td>27%</td>
<td>18%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Intellectual Diversity</td>
<td>5%</td>
<td>14%</td>
<td>18%</td>
<td>32%</td>
<td>27%</td>
<td>5%</td>
<td></td>
</tr>
</tbody>
</table>

• Another important factor is the ease of client access (77%)
Benefits of Dense Work Environments

Concentration of Employees in the Workplace is Important, Contributing to: (1 not important, 5 very important)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved Idea Generation</td>
<td>9%</td>
<td>9%</td>
<td>9%</td>
<td>27%</td>
<td>45%</td>
<td>72%</td>
</tr>
<tr>
<td>Information Sharing</td>
<td>5%</td>
<td>9%</td>
<td>5%</td>
<td>32%</td>
<td>50%</td>
<td>82%</td>
</tr>
<tr>
<td>Team Work and Collaboration</td>
<td>5%</td>
<td>5%</td>
<td>9%</td>
<td>27%</td>
<td>55%</td>
<td>82%</td>
</tr>
<tr>
<td>Product Innovation</td>
<td>5%</td>
<td>5%</td>
<td>9%</td>
<td>41%</td>
<td>36%</td>
<td>77%</td>
</tr>
<tr>
<td>Employee Productivity</td>
<td>0%</td>
<td>0%</td>
<td>30%</td>
<td>30%</td>
<td>40%</td>
<td>70%</td>
</tr>
<tr>
<td>Reduced Employee Turnover</td>
<td>5%</td>
<td>23%</td>
<td>27%</td>
<td>18%</td>
<td>23%</td>
<td></td>
</tr>
<tr>
<td>Increased Career Advancement</td>
<td>5%</td>
<td>9%</td>
<td>36%</td>
<td>36%</td>
<td>9%</td>
<td></td>
</tr>
</tbody>
</table>

Multiple benefits from creating dense work environments:

• Significant component for increased productivity, innovation, team work output
• No disadvantages associated with dense work environments
Strategic Industries are Driven by Clusters and Emerging Technologies
Industry Clusters

Vertically Integrated Enterprises
Targeted to Specific Markets & Segments
Intensive Workplace Environments
Clearly Distinctive Competencies
Concentrated Workforces + Talent Pools
Vendor and Support Services Depth
Critical Mass Draws + Retains Brainpower
Preserving Industry Clusters

New York City’s Clusters in Evolution

In Transition
Financial Services
Fashion
Customer Support
Media + Publishing
Electronic Commerce
Medical Service Delivery

Stable
Fashion
Specialty Retail
Tourism
University Education
Healthcare
Hudson Yards Development Project

...an unprecedented 26-acre (10.5 hectare) Mega-Mixed-Use development
Westside Hudson Yards
Manhattan’s Strategic Expansion

Preserving
New York City’s Clusters
Media + Publishing
Financial Services
Legal + Accounting
Life Sciences
Hudson Yards Development Project

Developer

Tishman Speyer
Morgan Stanley

Architects/Planner

• Murphy/Jahn Architects
• PWP Landscape Architecture
• Cooper-Robertson
When you Come to a Fork in the Road just Take it

The Immortal Yogi Berra
The Search for Workforce Talent

Talent Needs
Creatives
Technicals
Executives

City Response
Retail + Foodservice Amenities
Encourage Diversity

Create Venues
Cultural Entertainment Offerings

Urban Lifestyle + Residential Variety Incentives

Safety + Public Realm
QOL + Infrastructure

Education Workplace Prestige + Career Ladders

3 Generation Workplace
<table>
<thead>
<tr>
<th>FINANCIAL SERVICES</th>
<th>TECHNOLOGY FOCUS</th>
<th>LIFE SCIENCES + MEDIA</th>
</tr>
</thead>
</table>
| **Transaction Support**  
- Document Control  
- Credit Card Clearing  
- Transactional Insurance and Re-Insurance  
- Clearing & Forwarding  
- Database (default + prepayment) | **R&D (Applications)**  
- Nano Technology  
- IT + Software  
- Gene Therapy  
- Broadband  
- Agro Science  
- Mobile Technology  
**Semiconductor**  
- Internal Knowledge  
- DRAM  
**Alternative Energy**  
- Aqua-Science + Alternative Fuels  
**Logistics Mgmt**  
- Global Delivery Services | **Life Sciences**  
- Pharmaceutical  
- R&D  
- Medical  
- Equipment (testing, demonstration, marketing)  
- Healthcare Delivery  
- University Research  
**Digital Media Arts**  
- Motion Graphics  
- Streaming Video  
- Website Interactives |
The Slow Motion Crisis
Erosion of USA Competitive Edge

USA Current Competitive Advantage
Opportunistic deployment of Capital and Labor
Flexible Labor laws- hire / fire based on business
Openness of Society--“Do Anything Anywhere”
Best regulated + most efficient Capital Markets
Furnishes 40% of global University capacity
(source --vivek paul/wipro /friedman)

Sobering Statistics (source-- Natl Science Board)
Traditional emphasis on prestige of Science --
4000 companies birthed from MIT
----vs sobering statistics:
• USA students 18-24 yrs old in Science
now 14th in the world--vs. 3rd three decades ago
• 2003 Global Bachelor’s Degrees totaled 2.8
million---1.2 million Asian--.83 million European --
only .4 million USA
• For Bachelor of Science vs. other disciplines
Proportionate Share is even Worse --- 60% share in
China; 33% Korea; 41% Taiwan; 31% USA
• **USA Technology Dominance**
• **Fading Rapidly**
  • Engineering Degrees alone without other Sciences
    --USA has 5% **vs.** China 46%; Russia 25%
  • USA Patents Issued **shrinking** vs. global share
  • Technical Papers **Reduction in Global share published**
  • Poor attitudes of American teenagers toward Science Careers
  • 60% of top USA Science Students **and** 65% of top Math Students
    are children of Immigrants **(Source --- Ntnl Found for American Policy)**
  • Aerospace / Satellite **Domain Expertise squandered**
    by Co-production / Offset agreements
  • No **national Science Policy Agenda**
  • to confront Off-Shoring of Technology and Software **source --- Trilogy Assoc**
Industry Clusters

Support Existing Industry Clusters

Recognize Evolving Global Competition
Respect Barriers to Entry
Preserve Distinctive Competencies
Promote High Profile Achievements
Protect Talent Pool + Career Ladders
Proclaim Innovation + Productivity Edge
Aligning Civic with Corporate

**Corporate Interests**
- Aspirations
- Prestige
- Talent Magnet

**City Response**
- Developer Of Last Resort
- Incentives Facilitated
- Approvals
- Enlightened Developer
- Create Civic Spaces

**Aspirations as Civic Leader**
- Create Leadership Roles
- Publicize Achievements
- Create Civic Spaces

**Training Ventures+ Education Workplace Prestige**

**Incentives Facilitated Approvals**

**Affiliates**
- Civic Sponsor
- Enlightened Developer
- Create Civic Spaces
Global Competition to Preserve Strategic Clusters
Singapore Ad – Selling a Global City

Visit us at MIPIM, Cannes

Be part of our Distinctive Global City.
We make Too Many Wrong Mistakes

The Immortal Yogi Berra
• Derivatives + Synthetic Instruments = Mind-Numbing Complexity
• CDO’s + SIV’s -- much less stringent Underwriting
• Complete Credit Bubble Burst ---- soon to come
• Hedge Funds —Cross-Invested Systemic + Unknown Risks
• Mega Deals –Portfolio + Enterprise Acquisitions now common
• Pension Funds ---Denominator Effect --Stock declines = RE Increases
• CREDIT DEFAULT SWAPS == Nuclear event?
CMBS Workout Process Map

Complexity and Process challenges for Loan / Property Workouts

The complexity of today's Workout environment dwells the late 90's due to tranches of Equity and Debt and the conflicts between posted events and their Controlling Classes of Bondholders. This Process Map illustrates the various Workout Options and Trigger mechanisms for securitized products such as CMBS. We recognize in advance that many more variables exist to influence outcomes than can be easily shown.

For whole Loans, also known as Portfolio Loans, the Workout process is more defined with modifications, foreclosure and bankruptcy proceedings as real limitations. The Asset is very much a known quantity. However, Complexity in the Equity stack with Mezzanine Lenders and their Cure Rights is an extra layer of potential problems.

For Securitized Loans which have been pooled and sold in Rated Tranches to Institutional Investors, the Asset itself isn't as visible, and the rights of various Bondholders and are heavily limited by Servicing Standards and Inter-Creditor agreements. Default Trigger Events are carefully prescribed and Legal recourse may be sought whenever a breach in Servicing Standards or Bondholder interests is perceived. Collision between vested interests -- from Mezzanine Debt to Highest Rated Bondholders will produce "Tranche Warfare" where legal proceedings are likely the only resolution. Valuation approaches are under scrutiny as Loan of Value is a Trigger Event and the lack of comparable transactions will cause methodologies to be challenged.

For Non-Performing loans or Maturity issues, alternatives to foreclosure such as Term Extensions of Term and Loan Modifications may prove the best way to preserve Value depending on Asset Type, local Market Support, Operational and Leasing skills of the Borrower/Owner and patience of Institutional Investors.

Private Data Services track Loan Pools and CMBS issuances

Due Diligence

Loan Transfer Events

Decision Filters

- APDR
- CMS
- SOX

Due Diligence

Appraisal

- Valuation
- Risk

Reserve

- Mortgage
- Cash Flow

Security

- P&L
- Insurance

Reserve

Series Coverage Ratio

Settled Tranche

Reserve

- Collections
- Payments

Collateral

- Value
- Collateral

Tranche

- Performance
- Exposure

Bankruptcy

- New
- Old

Maturity

- Borrower
- Financial

Property Level Performance
- Rent Roll
- Operating Performance
- Tenant Stability
- CapEx
- Demographic & Market Data
- Valuation Comparable

Property

- Underwriting
- Risk

Loan Resolutions

- Foreclosure
- REO
- Transfer to 3rd Party

Partial Negotiations

- Loan Refinance
- Cash Out
- Prepayment

FULL PECKING ORDER

- Notice Period
- Discovery Depository
- Court Proceedings
- Auction

- Loan Transfer
- Special Servicing
- Loan Refinance
- Prepayment
- Partial Negotiations
- Notice
- Cure
- Payoff
- Bankruptcy
Position Yourself for Today’s Changing Marketplace

Re-energize your career with The University of Texas at Arlington’s new Certificate in Property Repositioning and Turnaround Strategies. This fast-paced, topical and timely program addresses acute economic and societal challenges while boosting your chances for immediate employment. Offered by the UT Arlington School of Architecture with participation by the College of Business, the 13-hour graduate-level certificate features strategic solution techniques and best practices for resolving issues in today’s troubled property environment. You’ll learn how to reposition distressed properties and participate in workout teams in four months of concentrated sessions with minimal time away from the office.
The Credit Crisis
Six Critical Factors

1. Pervasive Credit Erosion
   Dramatic Transformation of Perception due to Underperforming over-leveraged Credit

2. Derivatives (CDS) not yet Recognized
   Obligations
   Ultimately matched to Counterparty Risks

3. Deal Complexity
   Serious Brain Damage in Unwinding Financial Structures and Obligations

4. Legal Recourse will Significantly Lengthen Resolution
   Recognition of Long-term Public Goals vs. Short Term Litigation

5. Political Will to Innovate
   Open Kimono—Realistic Assumptions for Regulatory Infrastructure + Govt Incentives + Co-Investment Costs

6. No Advance Exit Strategy
   Was Pre-planned as continued Securitization and Debt Re-Capitalization
What Must Vision North Texas Do to Attract Corporate Development?

1. Create Vision Plans—Realistic Focus on Feasible Development + Respect Investment Hurdle Rates

2. Establish Pro-Development Mechanisms—Set Approval Consensus Thresholds—Financing Support Packages—PR Strategy

3. Assemble Incentives War chest Tax Credits + Infrastructure Bonding + Remediation Assistance + Land Acquisition
Benoit Mandelbrot on Capital markets
(Source PREA Journal)

- Property of Self-Similarity exists in Nature and Capital markets

- Price Changes over different Timeframes are statistically the same at every scale --- Long periods of stable prices and short, extraordinary variations

- Large price changes cluster and follow one another---Price changes are brutally sudden and large — Capital storm clusters

- Efficient Market Hypothesis that changes are driven solely by new information—is challenged --ignores outliers + extreme events--which are the essential elements of risk

- Risk Management does not account for tendency of bad news to come in flocks ---- and Modern Portfolio Theory assumes financial instruments have similar properties---but no real reason to think that is the case

- Discontinuity is essential in the stock market---using proprietary Portfolio Fixes is short sighted---tending to minimize Catastrophic Risk
I Didn’t really Say Everything that I Said

The Immortal Yogi Berra