Real Estate Insights, Forecasts & Strategies
Strategic Advantage
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The Real Estate Industry In 2025
100 Bankable Predictions You Need To Know

Friends & Colleagues:

Pericles, the "first citizen" of democratic Athens said**, "It is not our task to predict the future, but to be well prepared for it."** Commenting about the future, Danish philosopher Søren Kierkegaard said, "Life can only be understood backwards; but it must be lived forwards." Since we cannot rewind the past or stop the passing of time, tomorrow depends on what you do today. In the real estate industry, **the future is always uncertain…but the journey is exciting, rewarding and, for many, an opportunity to make a difference**.

Narrowing a list of "bankable predictions" from 200 or so to 100 was an intriguing and provocative challenge…less about identifying trends and more about opening one's eyes to multiple possibilities. It is clear from these 100 predictions that **we are currently and will continue to see the transformation from the Internet of Things to the Internet of Everyone**. The seamless blending and linking of people, products, services, opportunities and knowledge will make the single biggest impact on the real estate industry. **The ability to see, interpret and predict the future will be the attribute separating winners from losers over the next decade**.

Some who read these predictions may assume that the inevitable change will not impact them or will not occur. One purpose of this prediction newsletter is to describe the spectrum of possibilities. Just as importantly, it is to engage your organization and the real estate industry in a discussion of the transformative opportunities ahead for those willing to change and lead.

Writing about the future is a compilation of facts, opinions, perspectives and trends. **The future is not what we imagine it will be…but it will be an opportunity to shape it the way we may want it to become.** No one can see the future, but we can see "possible" futures based on the facts at hand and the tendencies of those who will be the primary drivers of future outcomes. From psychohistory to spectrum analytics, from cliodynamics to demographic trends and from geo-political shifts to the availability of valued resources, the future is often unexpected but always exciting.

"The past, like the future, is indefinite and exists only as a spectrum of possibilities.

Stephen Hawking

"The farther backward you can look, the farther forward you are likely to see."

Winston Churchill

"The future depends on what we do in the present."

Mahatma Gandhi

"The future is not something we enter. The future is something we create."

Leonard I. Sweet

"The future started yesterday, and we're already late."

John Legend

"It's tough to make predictions, especially about the future."

Yogi Berra

A New Currency Is Emerging

- Nearly $50 billion in reward points are distributed annually.
- The average U.S. household holds membership in 29 loyalty programs.
- U.S. consumers hold $3.3 billion in customer loyalty programs.
- The U.S. now has a $2.0 trillion underground economy.
- Nearly $12 billion in goods and services are bartered annually.
- There is approximately $500 million in unreported income in the U.S. each year.

➔The Likely Outcome⬅

"Electronic Commerce...the shift to a cashless society."

Source: CEL & Associates, Inc.

1. **The U.S. will move ever closer to becoming a cashless society**. Mobile devices, digital jewelry and apparel, and payment technologies (e.g., Apple Pay, Google Wallet, Square, Venmo, bitcoin and others with biometric technologies) will reduce the need for cash. The release of Zcash (untraceable Bitcoin alternative) could be a transformative event. (Nearly $1.0 billion in capital funding has flowed into bitcoin companies.) The adoption of EMV chip card technology will accelerate this conversion. In Sweden, for example, four out of five purchases are made electronically, and 95% of all sales at retail stores are handled electronically. Say "goodbye" to the underground economy (around $2 trillion today) and say "hello" to a national sales tax, bartering and electronic wallets.

2. **Medical care will be driven by health monitoring via bio-connective data and advancements in nano-technology and DNA mapping**. Most people will have three to four medical devices or bio-chips inserted under their skin, in their clothing, adhering to their skin as a BioStamp, or embedded within their mobile phones, computers, watches and in-home appliances, entertainment devices and cars. By 2025, electronic patient portals via a robust Medical Body Area Network (MBAN) will be commonplace. Within a decade, as many as 35% - 40% of Americans will be linked and/or remotely monitored by healthcare professionals. Think a more robust strava.com. (For those not on FitBit or familiar with Strava*,* it is a website that tracks and analyzes your exercise and/or training efforts.) By 2025, the U.S. will likely face a shortage of up to 90,000 doctors, which will mandate **residential and office building owners to become the earlier adopters of the new healthcare linking technologies**. The evolution of M-Health is underway.

3. **Regenerative and alternative energy will be readily available, storable and reusable**. By 2025, up to 25% of the U.S. energy supply will come from renewable energy sources. Solar photovoltaic panels, wind turbines, "sea snakes," mechanical ocean carpets, special buoys and wave energy will transform the way real estate assets are located, designed, engineered, constructed and operated. And don't forget the benefits of rooftop and exterior wall landscaping. According to recent studies, a "living wall" can increase the value of a commercial building by 20%. A new home or business goes solar every 2.5 minutes. Within a decade, every best-in-class developer will employ a Director of Sustainability. Check out Ambius (ambius.com) for a peek at living walls and how they could look when used in the real estate industry.

4. **By 2025, 25% - 35% of real estate firms in existence in 2015 will be gone** via merger, acquisition, bankruptcy, retirement or inability to compete. This "exiting" transformation will result in the emergence of the "Big Three" within each asset class and service sector. In the services sector, for example, CBRE has locked up one spot. The battle over the next decade for the other spots will be among JLL, Cushman & Wakefield, Colliers International and, depending upon the strategies deployed, Newmark Knight Frank. Watch for Internet firms such as Google or Amazon to explore and perhaps acquire an ownership position in one or more major real estate services providers…changing the competitive landscape dramatically. Furthermore, the battle for who controls big data in the real estate industry will intensify over the next decade.

5. By 2025, due to healthcare and medical advances, biometric sensing, better eating and dietary practices, lifestyle changes and other longevity advancements, some families in **the U.S. will have four living generations**. The first person to live beyond age 125 is alive today. In 2015, the number of Millennials surpassed Baby Boomers (75.3 million vs. 74.9 million). By 2025, as many as 25% of the U.S. population will be in multi-generational households. The demand for a different kind of residential rental properties (single-family and apartments) will accelerate over the next decade to meet the needs and expectations of each generation. **Forget the "Granny Flat," and embrace the "Grandparents' Wing," and the "Boomerang Hub."**

6. **The concept of everyone getting a college degree will be coming to an end**. Just-in-time knowledge specialists and crowd sourcing will be commonplace, and the balance between college and trade degrees is shifting. The future of higher level education will be in the "University of Everywhere." By 2025, up to 10 million college students will be taking at least one online course (up from 1.6 million in 2002). Approximately 85% of U.S. colleges will be offering online courses (currently 62%). Within a decade, **60% - 70% of training for real estate professionals will be online or led remotely. Training will be more "on-demand" and based on gamesmanship, one-upmanship and brinksmanship platforms**. The opportunity impact of student housing location and structure of real estate talent management departments (e.g. the need for training) will be significant.

The Changing Business Paradigm		
Old School		New School
Fine-tune existing practices	→	Re-invent existing practices
Manage opportunities	→	Create opportunities
Focus on competitors	→	Focus on customers
Legacy systems and policies	→	Value-creating systems and processes
Connected by employment	→	Connected by a motivating vision
Success as a goal	→	Success as a recurring outcome
Individual aspirations	→	Collective purpose and alignment
Keeping score	→	Shaping a future
Trying to change how people think	→	Trying to get people to think differently
Process and procedures	→	Flexibility and customization

Source: CEL & Associates, Inc.

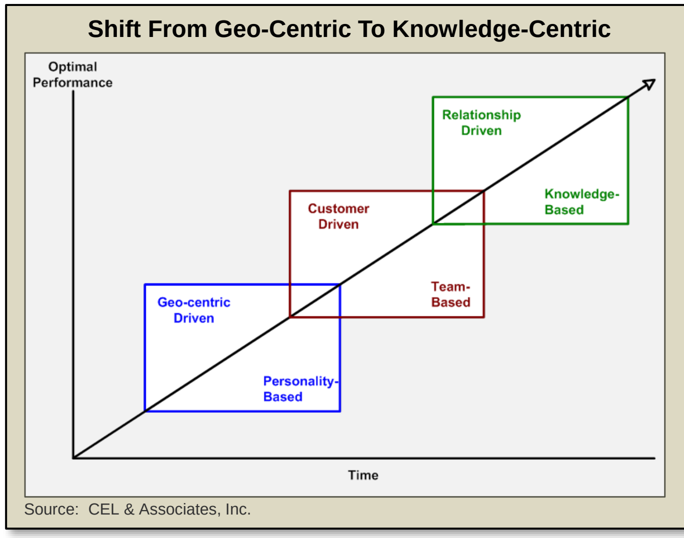
7. **By 2025, domain names as we know them may end**, as Americans purchase individual light spectrums for business or personal use. Visual and virtual worlds, personal information data banks and inter-connected knowledge will be individually controlled and populated.

8. **Global online retail sales could reach $4.3 trillion by 2025**. Within the next decade, total online retail sales could be 19% of all retail sales (currently around 7%). In the U.S. online retail sales could increase from $334 billion in 2015 to $750 billion by 2025 rendering many retail centers irrelevant or in need of dramatic transformation. FMCGs (fast-moving consumer goods) could be as much as $130 billion within 10 years. By 2025, nearly 100% of music and 75% of all books will be purchased digitally. By 2025, online retail stores in the U.S. could number over 300,000. Only six new malls have opened since 2006. **Owners of retail real estate should reinvent and/or repurpose their product, business and service models to survive** this Internet juggernaut. Smaller malls outside major cities will be the first to go. Larger malls must reinvent and re-energize their locations or they, too, will disappear. The distinction between online and offline is merging rapidly.

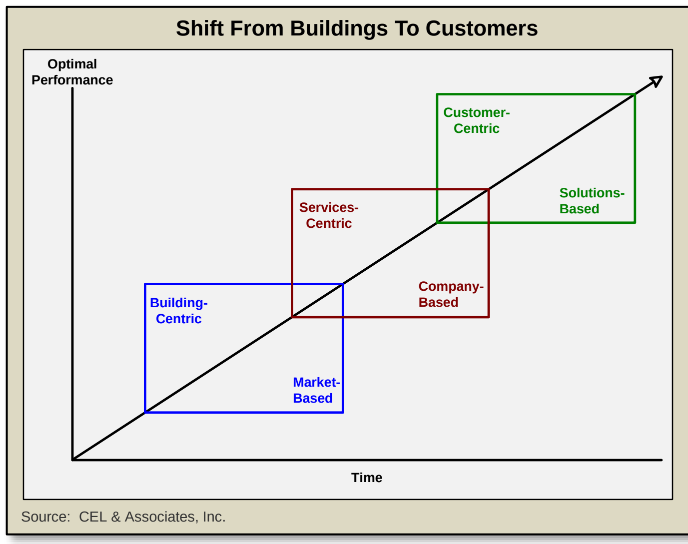
9. **The real estate industry will enter a new growth cycle between 2023 - 2028 (the "Age of Globalization & Knowledge")** after the downturn preceding 2020. This new cycle will flourish and peak around 2028 (assuming the Federal government or Federal Reserve doesn't tinker with the inevitable). The primary drivers of this new growth cycle will be activities directly and indirectly related to life sciences, bio- and nano-technology, generational shifts, relocation to urban and urban-adjacent markets, growth in artificial intelligence, robotics, micro-farming, alternative energy, STEM research, global unrest, cyber security and technology innovations. Not all markets will benefit from these transformative trends. **The unfolding "Game of Gigabits" will change many MSAs, creating distinct winners and losers.** Watch for the emergence of "cloud

immigrants" appearing as holograms to become an employment norm. Location may not be as important as connectivity. Access will trump ownership. Will you be ready for this new cycle?

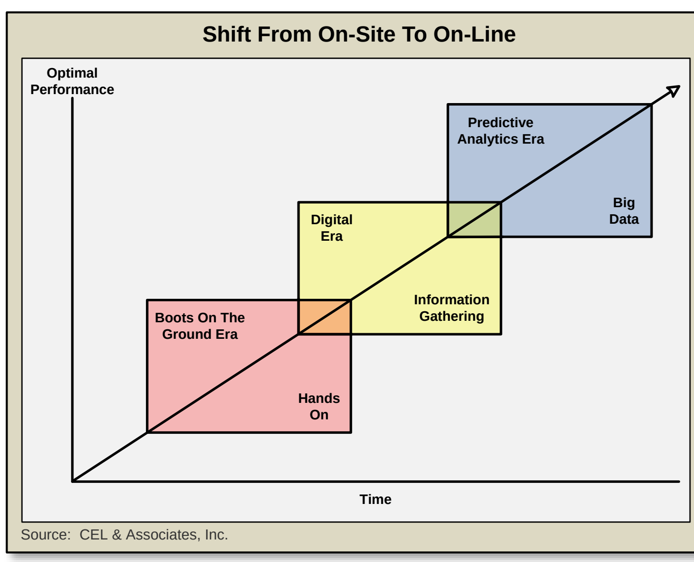
10. **By 2025, nearly every human on Earth will be hyper-connected**, creating a sea of new consumers shopping online for goods and services. By 2020, 34 billion devices will be connected to the Internet. The movement of goods and the accessibility to services will create incredible demand for new forms of warehousing and distribution. **Watch for demand for 50,000 sf or less warehouse/distribution** (filling gaps between the omega facilities). Around 75% of distribution centers are approximately 200,000 sf or larger, but by 2025, that percentage could drop to 63% - 68%.



11. **Watch for the acceptance of Blockchain (or something similar) to allow digital transfer of value and assets without a middleman** (Brokerage firms take note). With the probable emergence of the "Certified Underwriter" over the next decade, the ability to acquire, dispose or lease space in commercial assets no longer will need an intermediary. Accounting and law firms, along with financial advisory companies, are likely to become these Certified Underwriters by 2025. The role of a real estate Broker will shift from "selling" to "connecting and advising." **Within a decade, 50% of today's real estate Brokers will be gone**, replaced by technology-savvy, financially astute, transaction-based, relationship Advisors/Advocates.



12. Individuals will "meet, gather and get together" in cyberspace with no travel or meeting space required. **In an "always-on" environment, knowledge and skills follow the individual…physical space is less relevant and seldom necessary**. Think **NeueHouse** (neuehouse.com). By 2025, virtual space, holography and other Internet-based technologies will render many of today's meetings outdated and ineffective. Office buildings, apartments and retail centers will



have dedicated areas for virtual meetings. Watch for anthropomorphic human-machine interfaces to make meetings relevant and productive. Wireless charging points will proliferate with **Qi and PMA technology present in every real estate building**.

13. Driverless cars (Level 4 automation) will be a real and an accelerating trend (no pun intended). **Autonomous cars will be commonplace by 2025, and by 2035 will have a near monopoly on auto sales**. (Today cars sit idle about 95% of the time, and 17% of household budgets go to transportation). The number of miles traveled by car for those 34 years and younger is down 39%. Those that stand to lose are the automobile insurance industry ($100 billion), automobile finance market ($98 billion), the parking industry ($100 billion) and the $300 billion automotive aftermarket. A vehicle-to-grid distribution system will be a reality. Say "hello" to a driverless Uber, and say "goodbye" to taxis and aftermarket retailers. **By 2025, some invaluable real estate opportunities will occur involving the adaptive reuse of parking lots and garages.** Expect proposed legislation on limiting the number of cars a household can own; watch for significant taxes on new car sales; do not be surprised to see the banning of cars during certain hours in the CBD; and expect to see less street parking and more light rail systems. Use of America's roadways will be charged to users on a per mile basis.

In the United States, the National Highway Traffic Safety Administration (NHTSA) has proposed a formal classification system for *autonomous* vehicles.

- *Level 0:* The driver completely controls the vehicle at all times.
- *Level 1:* Individual vehicle controls are automated, such as electronic stability control or automatic braking.
- *Level 2:* At least two controls can be automated in unison, such as adaptive cruise control in combination with lane keeping.
- *Level 3:* The driver can fully cede control of all safety-critical functions in certain conditions. The car senses when conditions require the driver to retake control and provides a "sufficiently comfortable transition time" for the driver to do so.
- *Level 4:* The vehicle performs all safety-critical functions for the entire trip, with the driver not expected to control the vehicle at any time. As this vehicle would control all functions from start to stop, including all parking functions, it could include unoccupied cars.

14. Artificial intelligence, multi-sensory communication and robotics will render many jobs obsolete, creating a new wave of employment opportunities and requiring the commercial real estate sector to reinvest in progressive building designs, operating systems and tenant interface. **By 2025, 10 million or more jobs will be lost to robotics**. Over the next decade, many jobs will be "taskified" as the U.S. economy shifts to an uberization of human capital thus changing the nature and role of real estate service providers. Real estate companies must prepare today for a tomorrow when a "Property" Manager's role shifts to "Relationship," "Business" or "Enterprise" Director or perhaps "Asset Navigator" and away from the current asset-centric titles such as Property or Facilities Manager. **It would not be surprising to see many office buildings less than 250,000 sf in size being managed remotely**. The first of many self-cleaning buildings will be a reality.

15. According to our friends at Stratfor, the Middle East will continue to be chaotic at best and catastrophic at worst. China will struggle with slowing economic growth, an emerging middle class that wants more, remnants of the Red Guard still holding power and worsening pollution. Russia will be or on the verge of collapse (increasing world tension), **Europe will split into two to four factions**, and Muslim extremists will struggle with unsustainable social/entitlement programs and disenfranchised followers. A growing immigrant population will besiege Europe. "Trade scapegoating" is likely to rise resulting in protectionist measures and increases in political conflicts.

16. **The U.S. will shift to a renter-based society as homeownership shifts to "homerentership."** Watch for overall homeownership percentage to drop to the high 50s (currently around 63%). This will be great for the apartment sector, and bad for Boomers hoping to retire on proceeds from selling their home. (What Gen Xers or Millennials have the financial resources to buy those homes?) Watch for an increasing number of Baby Boomers, however, to downsize, move to walkable and transit-friendly communities, relocate to vibrant urban markets, incorporate ancillary income opportunities such as **Airbnb**, **HomeAway** and **Onefinestay** into their financial planning, and move to areas near college/university campuses, healthcare facilities and transit centers. Today, only 10% of Baby Boomers want to move to a retirement or age-restricted community. By 2025, that percentage could double. In addition, in 2014 **only 14% of children under the age of 18 were living with parents in their first marriage, with a father who worked and a stay-at-home mother**. In the 1960s, 50% of children lived in that family environment, according to Pew Research Center. Pew also noted that children "living with cohabitating parents or single-parent families were 2-3 times more likely to be living in poverty than children in married parent homes." First-time marriages are being delayed and the age of a woman having her first child is now 2 years later than in the past. Did you know that **one-third of today's marriages (35%) start online and that over 42 million adults have been married more than once?** This has significant long-term impacts on rental and affordable rental housing over the next decade. Furthermore, the marriage apocalypse appears to be accelerating. "Second Career" Boomers will be attracted to dynamic markets and affordability and rent control will be a front and center issue.

17. Digital connectivity…everything…everywhere. Wireless communications and accessibility will make the world and real estate industry far more connected. n this ultra-digitally responsive world, more "things" will be connected to the Internet than people. **Every operational aspect in property and community management will be driven by and connected to the Internet and each other**. Watch for the emergence of the "Digital Manager" and "Digital Leasing Representative" in apartment communities. Within a decade, touch-screen technology will be in every apartment unit for such services/features as repair requests, rent payments, connectivity to personalized healthcare services, security, digital pet services, entertainment, smart unit controls, concierge-like services, drone delivery areas, package arrival notifications, etc. Leasing representatives will be deploying predictive analytics to increase the probability of a lease. **The biggest technology concerns for apartment owners and operators in 2025 will be** cell phone bars (no dead spaces), bandwidth and **a team that can keep all technology up and moving 24/7**.

Real Estate Cycles Have Names

Time Period	*Cycle*
1983 - 1988	Age of Awakening Boomers & Entrepreneurism
1993 - 1998	Age of Technology & Start-Ups
2003 - 2008	Age of Exuberance & Debt
2013 - 2018	Age of Capital, Asset & Entity Rebalancing
2023 - 2028	Age of Accelerators, Technology & Innovation
2033 - 2038	Age of AI, Internet of Everything & Non-Land-Based Markets

Source: CEL & Associates., Inc.

The Brick-And-Mortar Struggle	
Why Brick & Mortar Stores Lose	**Why Brick & Mortar Stores Win**
▪ Can't Compete With Online Pricing	▪ Convenience
▪ Too Much Floor Space For Category Killers	▪ Sensory Interaction
▪ Lower Inventory Turns	▪ Personalized Selling
▪ High TI Investment	▪ Knowledgeable Sales Personnel
▪ Higher Rent	▪ Try-It-First
▪ No Answer To "Why Shop Here?"	▪ Overall In-Store Experience
▪ Negative Online Reviews	▪ Loyalty Programs
▪ Not Data-Miners	▪ Ability To Implement NBO Strategy
▪ Not Able To Connect 24/7	▪ Can Offer Both Online & In-Store

Source: CEL & Associates, Inc.

18. **Advancements in lighting, genetic crop modification, energy and water recycling will make year-round growing of food within commercial buildings commonplace**. Watch for the proliferation of high-rise farms in and around CBDs and alternative "growing" uses for large warehouse space. Adaptive reuse of commercial buildings into "farms" will accelerate. These high-rise farms could reach up to 60 stories, but **a 12-story mixed-use farm with residences would be a more popular option by 2025**. In Japan, a former Sony semiconductor factory now harvests 10,000 heads of lettuce *per day*. In New Jersey, a run-down steel factory (69,000 sf) soon will be producing 2 million pounds of produce per year using 95% less water than a field farm. MIT's City Farm claims to be 70%- 90% more efficient than traditional watering. Do not be surprised to see several biophilic cites emerge over the next ten years. Chicago's O'Hare aeroponic garden is another example of urban indoor farming. Today every calorie Americans consume costs approximately 10 fuel calories to produce and ship. **Watch for 5% - 7% or more of existing urban aging, non-competitive and inefficient office and industrial space to be converted to urban farms**. In Pueblo, Colorado, today there are 3 million sf of indoor marijuana cultivation and another 2 million – 3 million sf of indoor farms area slated to be constructed. Freight Farms may be a precursor of urban farming. Indoor farming will increase dramatically over the next decade. There are 700,000 unused shipping containers in the U.S. Start-ups like Growtainer or CropBox may be the norm within a decade. **Do not be surprised to see a Commercial Farm REIT by 2025, or sooner**.

19. Big Data, when combined with health monitoring, will make **apartment units and personal computers the gateway to preventive and ongoing medical diagnoses**. Smart grids, walls in apartment buildings and cube workplace dividers will be connected to local hospitals and medical personnel…providing 24/7 healthcare via "living connectivity." Big data within real estate firms will be used for such innovations as intelligent transportation, market insights, product development, consumer empowerment, improved collaboration, efficiency, rapid experimentation, and customized marketing and business development activities. By 2025, all newborns will have their own DNA map. New residents in apartment buildings will be able to "plug in" digitally upon arrival. Privacy concerns will abound in this "new normal."

20. Battery power will be 10 times stronger than today, creating a wave of lightweight cars and aircraft. Getting from point A to point B will be quicker and more efficient. **Think micro cars, micro airplanes, micro drones and micro delivery vehicles.** Do not be surprised to see super-fast charging in 30 seconds or less, and satellite-to-device automatic charging. A few innovations in the next decade include laser-made micro-supercapacitors, 3D copper foam batteries, solid state

batteries, aluminum graphite batteries and skin/body electricity harnessing. Commercial office buildings will look and feel more like FedEx as people, products and activities work in a seamless system of just-in-time interactions. Parking structures will become accessibility terminals and moment-in-time docking stations. Building designs must be "future-proofed."

21. By 2025, the process and method of determining asset value will be dramatically different. **Do not be surprised to see buildings with five – eight different valuation points (asset value, tenant value, connective value, energy conservation/generator value, ancillary income value, performance value and potential value)**. Further, it is very likely that national tenants will lease space by **units of consumption** from national building owners. Watch for the rapid adoption of taxes and fines for all commercial and residential buildings unable to meet energy efficiency standards.

22. Most rooftops on any commercial, industrial, retail or apartment building will have some form of solar and/or wind power generation. Improvements in photovoltaic technology, chemical bonding and energy storage will make today's buildings an energy resource. **Watch for energy to be derived from windows, exterior walls and rooftops via new film covered materials**. Do not be surprised to see an energy Airbnb-like grid to emerge and add significant cash flow and value to commercial and residential buildings. In Milan, Italy, the Palazzo Italia office building "eats smog" (an "osmotic organism") while consuming 40% less energy.

23. Think small! **Homes, apartments, work stations and workplace environments will become smaller.** Families will have fewer children, urban dwelling will become popular, multi-generational households will be commonplace and shopping will mean "home delivery" or 3-D manufacturing. The 3D global market is expected to grow to $21.1 billion by 2020. Personalization and diversity of choice will make the U.S. a quilt of residents who think big but live small. Check out meetup.com for a glimpse of this new sharing economy amid smaller living spaces. Think 300 sf – 400 sf micro units, shared kitchen and entertainment common areas, 25 sf – 75 sf of "personal" storage lockers and just-in-time deliveries of "for-the-moment" recreational equipment (owned or rental) and seasonal possessions. Apartment unit design and operational policies will place greater emphasis on creating more with less. Office workspaces will reflect this trend, as well. Watch for 3D food and clothing printers and iPad or iPhone remote food preparation and cooking technologies. Yes…**the real estate industry is about to experience a tsunami of change**. Real estate companies cannot be passive spectators in the emerging innovation economy.

24. **Watch for more single adults as a percentage of the U.S. population**. This rapidly growing segment will consist of widows, widowers, divorcees, Millennials and Gen Zs who delay marriage and alternative lifestyles. Watch for "limited-term" marriages (five, 10, 15 years). The nuclear family may be nearing its end. Family diversity will be the norm, and in its wake, the social impact will be significant. The apartment industry will be a beneficiary of this long-term trend. **Over the next decade, there will be no such thing as a "typical family."** American families will be configurations of relationships. Today, less than 50% of U.S. children live in a traditional home vs. 80% in the 1960s.

25. **Independent Consultants will flourish**. **Working from home and working independently will reduce real estate company payrolls and demand for "dedicated" office space**. Between 2005 and 2015, telecommuting in the U.S. increased 102%. Sixty percent (60%) of today's co-working offices are expected to grow. It would not be surprising to see, within a decade, 20% - 30% "core" employees (excluding on-site personnel) in every real estate organization supported by 70% - 80% self-employed, temporary, IC or for-rent employees who are highly specialized and utilized based only on need. On-boarding will be a daily event. Corporate culture will be the emotional tie-in. **Training and shared work (think Dropbox or GoToMeeting on steroids) will redefine the 2025 operating structure of many real estate firms**.

26. **The proliferation of robotics could assume up to 70% of assembly line work and a significant percentage of fast food, medical and construction jobs by 2025.** The commercial segment of the robotics industry could reach $17 billion in sales by 2025…the personal segment could add another $9 billion. From cleaning office buildings to modular construction and from warehouse storage to manufacturing, **robotics will reshape the "functional footprint" of 60% or more of today's commercial buildings**. The world's first robot-managed farm (spread) just opened in Japan. Nanobots will be capable of performing medical procedures inside our bodies. Robots will take care of our elderly, engage in personal (limited) conversations, and perform many of our personal chores. Jibo, the world's first social robot, will debut in April/May 2016 (think Siri with far more interaction). In addition, it can remember faces, tell stories and politely remind you of important tasks and events. **This shift to robotics (business or personal) could be the economic engine that drives the revitalization of many former midwest and northeast "manufacturing" states.**

Top Cities For Millennials

Rank	City	% Population 25 – 34
1.	Cambridge, MA	27.7%
2.	Alexandria, VA	24.4%
3.	Jersey City, NJ	22.8%
4.	Manhattan, NY	22.1%
5.	San Francisco, CA	21.5%
6.	Washington, D.C.	21.5%
7.	Boston, MA	21.5%
8.	Seattle, WA	21.4%
9.	Minneapolis, MN	21.3%
10.	Denver, CO	21.2%
11.	Austin, TX	21.2%
12.	Sunnyvale, CA	20.4%
13.	New York City, NY	17.3%
14.	Brooklyn, NY	17.3%
15.	Ann Arbor, MI	17.2%
16.	Berkeley, CA	17.0%

Source: Forbes 2015

27. **Watch for more edge cities to develop around major CBD as virtual communities begin to replace the need to "be there."** Aging Boomers will slowly move into walkable urban areas, while working Gen Xs, Millennials and Gen Zs will use robust transit systems, shared bicycles, electric transport buses and work-from-home options from edge cities and transit-connected suburbs for their commerce and their lifestyle. Watch for 18-hour markets to emerge as the U.S. development patterns become more in balance. **The American Dream of the '50s and '60s has been replaced by a spider-like web of American Dreams**.

28. **Journalism, as we have known it, will substantially be gone**, replaced by on-the-spot tweets, photos, videos and real-time reporting by citizens and self-interest advocates. Newspapers will be in rapid decline and **the Internet will become the main source of information**. Millennials get their news from a woven fabric of information, peer recommendations, tweets, shared videos, texts, social media and word-of-mouth (think a proliferation of BuzzFeed.com). News and information will be a salad bowl of problem solving, entertainment, social action, news, connectivity and sharing. Public relations within real estate firms will shift to robust web optimization strategies, predictive analytics, "instant" client/customer connectivity and knowledge-based content. Gone are generic ads…welcome to a world of personalized messaging, advertisements based on human needs, "step into" brand experiences and messaging directed to "who you are." **Retail and apartment owners and operators will need to embrace Oculus Rift-like technologies to compete for the discerning consumer**.

29. **By 2025, there will be many biosphere office buildings**. Similar to Amazon's 65,000 sf biosphere facility in Seattle, other tech and tech-related companies will embrace owning or leasing in buildings with botanical zones modeled on montane ecologies with serendipitous encounter designs. Google, Facebook, Apple and others are adopting this trend. Within a decade, office buildings will be places to assemble teams. **Office buildings in the future will look like a concierge hotel, operate like a spaceship, function as a teleport and be secured like the Pentagon.**

30. Watch for several major multifamily firms (REITs and privately-held entities) to merge with or be acquired by hospitality firms. Imagine the potential enterprise value (for Shareholders) created by, say, Hyatt's acquisition of AvalonBay Communities or if Marriott acquired Greystar. The blending of hospitality with for-rent residential assets is accelerating. A new lexicon of brands, service offerings and design options will emerge over the next decade. Will "resitality," created by Waterton (waterton.com/careers#resitality), become the new lexicon for apartment owners and operators?

31. **Many American cities will struggle to support and accommodate aging citizens, arriving immigrants, multiculturalism, ill-equipped public transportation systems and outdated infrastructure**. The gap between the haves and have-nots will grow and result in massive deficit spending by the Federal and several state governments, anemic increases in household incomes, poor job-growth policies, increasing entitlement programs, declining workforce participation levels and higher taxes (with, unfortunately, fewer and/or inferior services provided). The U.S. consumer will have less to spend, and the U.S. will literally be a less prosperous nation. During the 2016 – 2025 period, the direction, values, identity and prosperity of Americans will be defined. The choice between big government and individual achievement and entrepreneurism will be tested, **and the real estate industry will be asked to "build to" the values, culture and sense of community needed to prosper in the years and decades to come**. In the next decade, over $1 trillion will be invested in the creation of "Smart Cities." Remember, **the real estate industry for the past 2,000 years has been the unfinished business of society**.

32. Between 2015 and 2025, the U.S. will add 23.3 million residents, increasing to around 345 million residents. **These additional people will be mostly minorities (Hispanic and Asian)**. By 2025, there will be nearly 76 million Hispanics (up from 51 million in 2010), and they will account for nearly 57% of the U.S. population growth. By 2025, Asian and Hispanic populations will be 24% of the U.S. population. **California, Texas and Florida are expected to account for 45% of the nation's population growth for 1995 to 2025**. New York will be the biggest population loser from 1995 – 2025 (net loss of 5 million residents). Twenty-seven states will have 20% or greater of their population categorized as "elderly" (California and Texas are not in the top 27). Real estate investment, development, management and service opportunities will follow those demographics.

33. **Online grocery sales could account for 1% or more of all grocery purchases by 2025** (each 1% of grocery Internet sales equals $76 billion). More grocers will go out of business or

Generational Shifts In Retail Shopping			
View Of...	Baby Boomers	Xers	*Millennials*
Retailers	Trust the brand.	Trust the connectivity.	Trust the experience.
Groceries	Food as a necessity.	Food as a connector.	Food as a nutrient.
Frequency Of Shopping	Structured and consistent.	Based on time availability.	As needed...24/7.
Retail Motivation	Advertisements.	Ratings.	Word-of-mouth/Twitter.
Shopping	One stop.	Digital retailing.	Unlimited stops.
Physical Plant	Mega centers.	Smaller stores.	Omni-channel.
Restaurants	Place to eat.	Place to socialize.	Place to connect.
Stores	Place to see products.	Place to interact with products.	Place to experience products.
Display Space	Floor space.	Display space.	Mental space.

"Technology has changed the definition of retail real estate."

"When online sales reach 15% – 20%, the current retail model begins to fail."

Source: CEL & Associates, Inc.

consolidate to survive by 2025. Albertson's acquisition of Safeway (2,200 stores under 18 different banners); Ahold's $29.5 billion acquisition of Belgium's Delhaize (6,500 stores); and Kroger's $2.5 billion acquisition of Harris Teeter, among other acquisitions, are creating a handful of middlemen between the 2 million farmers and the American consumers. Owners of grocery-anchored retail centers, beware. Remember, around 40% of food is consumed away from home. In addition, **do not be surprised if Amazon controls 15% - 20% of grocery sales** (Amazon Prime Pantry, Amazon Dash and Amazon Food).

34. By 2025, **at least 50% of U.S. businesses** (the office, industrial and retail tenant base of the real estate industry) **will change their services and/or goods delivery systems**. Subscription-based revenue models, online sales, pay-per-use and content portals will redesign building and floor plans, operating models and need for-the-moment physical space options. Watch for concierge services to dominate the tenant experience. Citigroup's new minimalist building in New York City (Tribeca) may be a harbinger of designs to come. Adjacent warehousing, hot-desking and "instant" offices will be popular. **By 2025, the role and title of the Property Manager will be changing rapidly,** and some office buildings will have been built and maintained by robots. Welcome to the world of sensors and Enterprise Directors!

35. **Data breaches and cyber crime will increase dramatically**. Real estate firms and asset owners will need to install devices, systems and firewalls to protect data and prevent elevators from free fall, HVAC systems from shutting down, safety and security systems from being rendered useless and tenant/resident from data being stolen. The average cost per U.S. data breach, per a Ponemon Institute report issued in 2015, was $6.5 million, or approximately $217 per record lost. Data breach losses in the healthcare industry were $398 per record. Cyber attacks are rising, and the real estate industry is ill-prepared for this onslaught. **Watch for two to five major successful cyber attacks on leading multifamily firms and select REITs** over the next decade. Cyber-defense and cyber insurance will be mandatory for every real estate firm in the next 10 years. **Watch for the formation of one or more solely High Security Industrial REITs by 2025**.

36. By 2025, Millennials and Gen Z will account for more than 50% of the U.S. workforce. **Expect the total office space square footage per employee to decline to around 100 sf within 10 years**. Collaborative workspace, mobile offices, increasing numbers of employees who work remotely, greater autonomy and work-style flexibility will drive this change. **Office buildings will become network orchestrators, not employee domiciles**. Google, Facebook, Twitter and many others have rendered traditional office and retail space irrelevant as users/consumers want the freedom to choose how they work and shop. The accelerated immersion (video, messaging and conferencing) curve of adaptability is altering how people interact. **By 2025, people will not want computers to work…they will want environments (real and Internet-based) in which they can relate, share, communicate, learn, discover, analyze, collide, create and enjoy.**

Top Cities For Apartment Dwellers

Rank	City	Apartments As A % Of Housing
1.	New York, NY	51%
2.	Washington, DC	42%
3.	Los Angeles, CA	41%
4.	Houston, TX	41%
5.	Dallas, TX	41%
6.	San Francisco, CA	40%
7.	Seattle, WA	38%
8.	Austin, TX	35%
9.	Boston, MA	35%
10.	Denver, CO	33%
11.	Chicago, IL	30%
12.	San Diego, CA	29%
13.	Columbus, OH	28%
14.	Charlotte, NC	27%

Source: NMHC

37. To accommodate high-impact entrepreneurs, owners of office and apartment buildings must create collaborative workplace and networking gathering places for new ideas, new companies and tenant-sharing space. There are now over 6,000 co-working spaces worldwide and over $1.0 billion has been raised to grow this tenant/user niche. Work and home will blend for these innovators and make-a-difference entrepreneurs. Career paths will be a lattice configuration rather than a ladder to the top. **States that encourage and incentivize creativity and creative class entrepreneurs will prosper. States that are high tax, high regulation and anti-business will struggle and dramatically lose market share by 2025**. Degrees in Entrepreneurship will rival the number of business degrees. States like Illinois, New York, Maryland, California (Silicon Valley and the San Francisco Bay are exceptions) and New Jersey lead the nation as the "worst states" for economic and personal freedom, according to George Mason University. Perhaps that is why most Apple employees do not work in California, and hundreds of companies with tens of thousands of employees have relocated out of the Golden State.

Top Enterprise Cities

Rank	City	Metro Areas
1.	Austin, TX	Austin, Round Rock, San Marcos
2.	Miami, FL	Miami, Ft. Lauderdale, Pompano Beach
3.	San Jose, CA	San Jose, Sunnyvale, Santa Clara
4.	Los Angeles, CA	Los Angeles, Long Beach, Santa Ana
5.	Denver, CO	Denver, Aurora, Broomfield
6.	San Francisco, CA	San Francisco, Oakland, Fremont
7.	New York, NY	New York, Northern New Jersey, Long Island
8.	Houston, TX	Houston, Sugar Land, Baytown
9.	San Diego, CA	San Diego, Carlsbad, San Marcos
10.	San Antonio, TX	San Antonio, New Braunfels

Source: Kauffman Index.

38. Crowdfunding for real estate ventures and public stock for individual real estate assets will become more popular. With $300 billion of real estate loans to be refinanced over the next three years and an estimated 20% of those loans will need more equity, crowdfunding may be a solution. **Crowdfunding in the real estate industry reached nearly $2.5 billion in 2015,** according to Forbes magazine. Expect this number to grow to $50 billion - $75 billion by 2025. Firms like RealCrowd, Prodigy Network, RealtyShares, Fundrise and others will likely dominate this emerging capital raising activity. **I expect private credit to grow significantly. By 2025, it could be of equal prominence with the level of private equity**. Regulations are making it nearly impossible for small- to mid-size banks to lend. In this void, private credit will emerge in a P2P lending platform. Private lenders will be able to offer lower rates and better terms because of their efficiency and absence of high cost facilities and overzealous regulations.

Hall of Fame
Modular Building Manufacturers

- Pacific Mobile Structures, Inc.
- Porta-Kamp, Inc.
- Ramtech Building Systems, Inc.
- Reliance Asset Management
- Satellite Shelters
- T.R. Arnold & Associates, Inc.
- Whitley Manufacturing Co., Inc.

Source: Modular Building Institute.

39. With a population of nearly 80 million, **a growing percentage of Millennials will relocate to and/or continue to live in the suburbs.** Millennials tend to live in areas similar to where they previously lived. In 2014, over 16% of Millennials moved from a city to the suburbs. The likelihood of relocating to the suburbs increases dramatically once a Millennial reaches age 30 or older. By 2025, expect an accelerated percentage of Millennials to move out of the CBD. Over the next decade, Americans will live, work and shop in markets that are considered "cool/hip," authentic, amenity-rich, transit-oriented and resilient. Seeking lifestyle and "people like them" will be a prime driver of the "Great Shift" among Americans. Whether it is

starting a family, settling down or retiring, the attention will be around markets that are inviting, appealing, safe and secure, and progressive. The great suburban to urban (Boomers) an d urban to suburban (Millennials) is now underway. That will be a boom to many real estate investors and developers in those select dynamic markets.

Benefits Are Expanding	
Benefit	% Real Estate Firms Are Providing
Telecommuting	35%
Flex Time	45%
Free/Subsidized Parking	44%
Business Casual Days	67%
Wellness Programs	49%
Onsite Workout Facility	28%
Paid/Subsidized Professional Dues	47%
Tuition Reimbursement	58%

Source: CEL & Associates, Inc. 2015 Compensation & Benefits Survey

40. **Women could comprise nearly 40% of the C-suite positions within real estate firms by 2025**. The share of women CEOs taking office has risen 71% over the past five years. In 2015, women held 18.8% of board seats. Women currently account for 57% - 62% of all undergraduate degrees earned. Nearly 71% of women high school graduates enrolled in college vs. 61% for men. Women make up 25% of ULI's membership, but account for only 14% of its CEOs. Sixty-two percent of women aspire to attain a C-suite position or start their own company. Real estate firms must become more women-friendly to remain competitive by 2025.

41. **Human Resources Directors increasingly will make or have significant impact on lease negotiations and space design**. Real estate brokerage firms should re-engineer their client service models to appeal to the Talent Managers (Human Resources Directors) rather than focus solely on the Directors of Real Estate, Chief Financial Officer or CEO. There are over 125,000 Human Resource Directors in the U.S. today. According to a recent KPMG study, "59% of HR Directors will grow in strategic importance" within U.S. companies. Increasing worker productivity and employee satisfaction will become one of the top priorities within Corporate America. **Many future leasing decisions will be made by the Director of Human Relations.** Landlords and Brokers be aware!

42. **Customer loyalty programs** (3.3 billion loyalty membership programs in the U.S.) **will move into the real estate industry**. Tenants and residents will earn "points" for rent paid and ancillary services used, tenants will expect loyalty "credits" for tenure and energy conservation, and retailers will want "credit" for foot traffic generated. Because brand loyalty is important, **real estate assets will move from static structures to dynamic destinations**. What would happen if apartment residents' loyalty points could be used to purchase gifts (similar to the FedEx Rewards program) or be used for vacation travel? **Watch for Platinum, Gold, Silver and Bronze property-based service levels in a "you-get-what-you-pay-for" lease structure**. All tenants and residents will not be treated equally.

43. **Watch for an overall building rating system** with a scorecard on such matters as tenant or resident satisfaction, energy efficiency, safety and security, proximity or access to supportive services and amenities, "healthy" environment, parking, etc. Credible green building ratings (e.g., USGBC, Green Globes, ENERGY STAR and others) will be commonplace. However, there is a growing trend away from the very costly USGBC ratings as building owners become more interested in cost-effective rating systems that help them design and operate their properties profitably.

44. **The talent shortage will continue in the real estate industry through 2025** due to a shift from a supplier of services to a provider of knowledge and a workplace lifestyle solution for tenants. Technology advancements; use of temporary, contingent or contract workers; modernization; accelerated retirement of many C-suite Baby Boomers; and a lack of job-ready college graduates will contribute to this shortage. Identifying and retaining "high potential" and "next-generation leaders" will be a priority for all real estate firms seeking success. **Beginning in 2015, the real estate industry could be faced with a potential shortage of 15,000 – 25,000 qualified workers per year through 2025**. Watch for the emergence of "brain training" (e.g., Luminosity) platforms to facilitate bringing and keeping all employees "up-to-speed." **Training within real estate firms by 2025 will become more social and game-based**.

Shifts In Talent Management

Old Way		*New Way*
Standardized Policies	→	Governing Practices
Standardized Training	→	Personalized Improvement
Check-The-Box Hiring	→	Core Competency & Values Hiring
One Week Onboarding	→	Never-Ending Onboarding
Training As A Cost	→	Training As An Investment
Orchestrated Practices	→	Orchestrated People
Human Resources	→	Talent Management
Set Procedures	→	Ingrained Behaviors
On-High Directives	→	Engaged Solutions
On-High Decisions	→	Collaborative Decisions
One Star	→	Galaxy Of Stars

Source: CEL & Associates, Inc.

45. **The aging and retiring Baby Boomers will accelerate the process of downsizing homes and lifestyles**. Many will relocate and rent near colleges and universities, walkable urban areas, zones near retail, healthcare and entertainment facilities and in or adjacent to places where "second careers" can be started or fostered. Living longer will mean an encore career for some, an entrepreneurial start for others, and a volunteer path for those so inclined. Watch for many municipalities to rethink how they serve this burgeoning population of active adults. It is no longer about golf and tennis, but it is all about "staying relevant."

46. **As much as 35% to 45% of current office work will be conducted away from the office**. Home offices, co-working facilities, shared offices, shared desks, and workspace by demand will flourish. Watch for firms like Marriott, Starwood, Hyatt and Hilton to create "pop-up offices." Mobile/web apps like WebEx, LiquidSpace, GoToMeeting, AnyMeeting, meetingBurner, CliqMeet, Join.me and Twiddla, among others, will create point-and-click ways for people to work and meet…outside of a dedicated office. **As many as 35% to 40% (perhaps even up to 50%) of today's workforce could be "freelancers" by 2025**. Telecommuting will create a generation of nomadic offices. Expect a dramatic increase in tenant improvement costs over the next 10 years to accommodate the "office of the future."

Major Office Shifts Are Underway

From…	To…
Managing Four Walls	Managing Inside The Four Walls
Dedicated Offices	Unassigned Work Space
Locked Doors	Collaborative Space Designs
Work From Offices	Work Remotely
Face-To-Face Meetings	Virtual, Skype, GoToMeeting
Fixed Walls	Movable Walls
Attached Workforce	Untethered Workers
Controlling Boomers	Collaborative Millennials
Office Buildings	Workplace Environments
Old Technologies	New Technologies
9:00 to 5:00 Office Day	24/7 Workplace

Source: CEL & Associates, Inc.

47. **Real estate firms hiring Millennial and Generation Z talent must dramatically restructure their talent management plan and strategy to attract and retain these professionals**. By 2025, real estate organizations must demonstrate diversity, entrepreneurial operating procedures, empowered organizational architecture, collaborative workplace policies and practices and encouragement of innovative thinking. In a recent study conducted by Connect EDU, 60% of college graduates plan to search for jobs on the websites of companies they want to work for, 45% plan to attend recruiting events and 42% plan to work with their college's career services department. A little over 25% intend to use LinkedIn, and Millennials are far more likely to search for jobs on their mobile devices. Watch for 75% to 80% of real estate firms to be active in civic, social and environmental charities/initiatives. Making a difference in society will be as important as executing business strategies that create Stakeholder value. Over the next decade, real estate firms will need to restructure their recruitment efforts dramatically to attract, retain and motivate the best and the brightest.

What Do Millennials Want In Office Space?

- Work-Life balance
- Flexible schedules
- Collaborative workplace
- Open work stations
- Small lounge areas
- Informal conference space
- Many places to plug-in
- Relaxation areas
- Places for unexpected collisions
- Natural lighting
- Use of recycled materials
- Carbon neutral
- Re-configurable format
- Functionality
- Storage lockers
- Scribble walls
- Informal seating areas
- Pet friendly

Millennials do not like the lack of sound privacy.

81% of Millennials want to choose their own work hours.

Source: CEL & Associates, Inc.

48. **The average number of square feet per employee in office buildings will shrink to less than 100 sf.** The cubicle and collaborative workspace in 2025 will feature adjustable desks; personalized temperature control; noise-cancelling speakers; privacy shields; media walls; electronic smart glass windows; transparent holographic project screens; Google glass (3D); and personal connectivity stations. **This "democratizing access" trend will continue through 2025**. The accelerating use of Instagram, Twitter, LinkedIn, Facebook, Google, YouTube, Pinterest, Yelp, Foursquare and others will reshape the need for and use of fixed office space. **Interior designs and common areas must create opportunities to maximize chance encounters and unplanned interactions**. Seeking ways to create sparks when people and ideas collide will become the design mantra of office building developers and owners**. Watch for a new metric to emerge that focuses on worker productivity, not number of workers per square foot.** Removing "wasted square feet" to create "peak day performance" will be a challenge for many owners and operators of office buildings. **Office space must become a tool for growth, not a place to occupy.**

49. The consolidation of real estate will continue as technology, client demands/expectations and governmental regulations, standardized operating procedures, reporting and documentation practices, building standards and energy conservation requirements will create a more uniform real estate industry. **Expect investors and lenders to demand "approved" succession plans** for key leaders. In addition, do not be surprised to see mandated annual appraisals for buildings over a certain value. In addition, **watch for legislation requiring all Property and Community Managers to be "licensed and certified."**

50. **The real estate industry slowly will become America's Energy Czar**. The nearly 14 billion sf of LEED-certified building space could double by 2025. The number of ENERGY STAR certified buildings could increase to nearly 50,000. Watch for the Federal government to issue its own

"Green Standard" (beyond ENERGY STAR) as minimal criteria for obtaining a FDIC-bank loan. **It would not be surprising to see the U.S. Department of Energy require all buildings sold in America to set aside an escrow account to bring the to-be-sold building up to minimal "Green" standard. Furthermore, an increasing number of states and cities will, by 2025, impose "energy inefficiency taxes."**

51. Office buildings in 2025 will function like the Ritz Carlton or Marriott, operate like a timeshare and appear and function like TSA's airport security. Office space will be modular with "walls on wheels," wellness features, natural features (indoor streams, forests, plants and lighting, and robust air filtration systems). **Office buildings will shift from 8 a.m. – 6 p.m. to 24/7 activity centers.** Tenants will create two or three workforce shifts to maximize dedicated space. Watch for an increase in "immersion suites" and tele-presence meeting platforms. **The rise of "Any Time/Any Place" office space will be very active by 2025.**

52. **Watch for companies like Starbucks, Marriott and others to create dedicated meeting and networking space**. Flexible meeting space will have food service and technology amenities that feel more residential. Imagine what would happen if only 20% of the over 11,000 Starbucks or 90,000 hotels in the U.S. became an extension of one's office. **Office connectivity will be wherever and whenever you want it.**

53. **By 2025, there will be a flood of new titles within the real estate industry**. Titles such as Enterprise Director (replacing Property Manager), Alternative Currency Banker, Locationists, Business Colony Manager, Competition Producers, Octogenarian Service Providers, Workplace Environmentalists,

Top Jobs In 2025

- ***Personal Worker Brand Coaches and Managers:*** In the world of "on-demand" workers, a new set of skills will be needed. These are related to "self-management, self-promotion, relentless marketing, administration and self-development."
- ***Professional Triber:*** A freelance professional manager that specializes in putting teams together for very specific projects.
- ***Freelance Professors:*** Online courses and alternative accreditations will give rise in growth of freelance or independent professors.
- ***Urban Farmers:*** Small artisan farmers will continue to grow as urban farming becomes more significant.
- ***End-Of-Life Planners:*** The senior population continues to increase, and Boomers will be redefining that last phase of their lives.
- ***Senior Carer:*** By 2025, the World Health Organization predicts that 63% of the global populations will live to over the age of 65. At the moment, life expectance is increasing about 1.5 days per week.
- ***Remote Healthcare Specialist:*** This includes a range of healthcare specialists who are capable of creating systems/devices to proactively track health issues and/or be involved in remote [virtual] healthcare relationships with patients.
- ***Neuro Implant Technician:*** Our knowledge of the brain is currently developing more quickly than almost any scientific field. A large diverse range of disciplines will be needed.
- ***Smart-Home Handyperson:*** As the smart home continues to evolve, there will be a need for technically adept handymen and women.
- ***Virtual Reality Experience Designer:*** Virtual reality will be as much a part of our lives as the Internet and our iPhones are today.
- ***3-D Printer Design Specialist:*** People will become more interested and appreciative of 3-D printing and will hire technicians to design and print objects for them.
- ***Sustainability Manager:*** Corporate Executive position that is in charge of the firm's environmental programs. The Manager "formalizes" their commitment to the environment.

Source: CEL & Associates, Inc. and Fast Company.

Urban Agriculturalists, Talent Management Director, Alternative Energy Coordinator, Cyber Security, Director of Sponsorship, Innovations Director, Lifestyle Consultant (formerly residential leasing representatives), etc., will flourish.

54. **Watch for the issuance of the "digital tenant chip" to all tenants and residents**, granting access to elevators, office space, parking facilities, common space, restrooms, dining areas, secured trash and recycling areas, and recreational facilities. Each chip will activate access, lighting, signage (personalized), communications, facilities access and safety/security oversight. Heat mapping will be commonplace in retail, office and multifamily properties. Expect **many retail real estate companies to create Asset Behavioral Specialists to improve building design and customer traffic engagement.**

55. **Grocery stores will become an extension of the American home**. Banking, insurance, counseling, healthcare, soft goods, computer support, connective services to "approved" local service providers, education, government interface and (of course) food and beverage will become an integral part of major grocers. Did you know that in 2015, around 33% of Americans have not visited a bank in the past year? **Owners and operators of retail real estate assets will need, by 2025, a full-time "Program Management" department** to bring entertainment and positive visitation experiences to all visitors. Malls and regional community centers must reinvent themselves to enable a more robust human engagement and multi-generational experience. Striking a balance between the digital and bricks-and-mortar shopper will be critical for asset performance success.

56. Only 41% of Millennials shop at traditional grocery stores. Every store in the world is in the pocket (cell phone) of each Millennial. **Approximately 72% of Millennials do their retail shopping online** before going to a store or mall. This "fauxsumerism" or "contraconsumerism" is shifting buying to a more neutral, shared, traded or barter retail environment. **Shopping in 2025 must be entertaining, educational, informative, engaging and a desired destination. As many as 65% - 75% of today's retail centers do not meet these criteria**. Follow the trends of Uber, Airbnb, SquareSpace, Real Rentals and Rent The Runway to see what 2025 may look like.

Rapidly-Growing Food/Grocery Delivery Services			
❑ CampusFood	❑ Doordash	❑ Grubhub	❑ Placebag
❑ Caviar	❑ Eat 24	❑ iMenu 300	❑ Plated
❑ ChowNow	❑ EAT Club	❑ JustEat	❑ Restaurantoncloud
❑ Culinar	❑ EatStreet	❑ Maple	❑ Restolab
❑ Deliveroo	❑ FoodToEat	❑ MealClick	❑ SnapFinger
❑ Delivery Here	❑ GetQuick	❑ MenuDrive	❑ Spoonrocket
❑ DiningIn	❑ Gimmegrub	❑ OrderLunch	❑ Sprig

Source: CEL & Associates, Inc.

57. **Owners and managers of retail real estate assets will be impacted by a rapidly growing "home delivery" trend**. In 2014, more than $1 billion in venture capital money was invested in food and grocery delivery platforms. The race to convenience and focus on having more "personal time" will change the way many retail centers operate. Watch for the emergence of "virtual" restaurant chains (good for owners of industrial kitchens…bad for owners of storefront food service properties). Drone delivery services will grow, and the new "village economy" will be an increasing

reality. The shareable food movement, underground restaurants, private clubs, private cafes, private markets, urban homesteaders, food swap events, raising chickens or vegetables, and gift-economy restaurants are growing in popularity. Check out Munchery, GrabaFruit, Edible Exchange, Gobble, Eatwithme, The Platform Collective and other agriculture bartering platforms as just a few examples of this growing trend. By 2025, consumers will expect and utilize far more office or home delivery options. From groceries to soft goods, delivery services such as Instacart, Amazon, Google and Walmart will require new retail center designs to combine in-store shoppers (automobiles) with online shoppers (delivery trends). Retail centers will look, function and be programmed far differently than they are today. Watch for FedEx to create iPhone-enabled drop-box containers at say 7-Eleven convenience stores. FedEx places your package in a secured locker at a 7-Eleven of your choice, you receive an email or text notification with a code you may use to open and retrieve your package.

58. **The number of farmers' markets (over 8,100 today) could increase by 30% - 40% by 2025** as access to "health" and "local" food products continues to rise. Watch for many commercial real estate owners and operators to make their underutilized parking lots "weekend community centers."

59. Communities increasingly will require real estate and value-add owners, developers and operators to provide **dedicated parking spaces for Zip car-like services, racks for shared bikes and parking spaces as delivery zones for many just-in-time deliveries**. Check out the bike-sharing platforms of CitiBike, Motivate (nation's largest), Divvy, CoGo Bike Share and Pronto Cycle Share to learn what most U.S. cities will likely have by 2025. The number of people who travel to work by bike has increased nearly 60% over the past decade (now over 750,000 individuals). In Portland, Oregon, over 6% of workers commute by bicycle.

60. Watch for combined growth in "friends-in-the-making" enterprises. Firms like Airbnb, Vayable, Eat, Spinlister, TaskRabbit, Fon, Yerdle and Boatbound, to name just a few, will alter the role of real estate dramatically. **By 2025, real estate will increasingly shift from a place to go to a place to connect. The physical space will become less important than the connective or interactive space**.

61. Robotics, and building designs that incorporate robotics, will transform the warehouse/distribution sector as the movement of goods demands 24/7 speed, efficiency and scale. **By 2025, 40% or more of existing warehouse/distribution space must be adapted or redeveloped for a new generation of goods-to-man, not man-to-goods**. Entities like Kiva Systems, Fletch Robotics, Swisslog's CarryPick System and Bastion Solutions, among others, will lead the way to a wave of more functional warehouse and distribution facilities. A Chinese firm has built the first 3-D printed, five-story apartment building. The times are indeed changing!

62. One unfortunate 2025 prediction is the outcome of an increase in domestic terrorism. **Within the decade, there could be 15 – 20 or more significant terrorist events in the U.S**. The net result will be TSA-like security at retail malls, office buildings, high-rise properties, theaters, restaurants, urban mixed-use projects, sports venues, transit centers and other gathering places. Real estate developers should incorporate high-security features and capabilities into design considerations…today!

63. **Within a decade, there will be thriving underground parks, office and retail complexes**. Using remote skylights, inverted pyramid designs and "fresh" air and sunlight technologies adding "space" does not have to be linear…it can be a reversed vertical. Shanghai and Beijing (34 million sf of underground space by 2020), and Helsinki (more than 400 underground facilities) lead the way.

64. **According to the U.S. Census Bureau, the 65+ age cohort's share of the U.S. population will grow from 13% in 2010 to more than 20% by 2030**. Medical office space is now around 20% - 25% of all U.S. office space under construction. The shift from on-campus, inpatient care to outpatient treatment in off-campus facilities is accelerating. By 2025, medical office space will be

integrated via technology and satellites in shopping centers, grocery stores, large mixed-use and apartment assets and in large office complexes. **Bringing healthcare to the patient (vs. having the patient come to the healthcare provider) is becoming the new paradigm**.

65. The current zoning throughout the U.S. is not reflective of the dynamic changes in how individuals work, shop, live and recreate. **Rapid urbanization and globalization mandate a new definition of zoning.** By 2025, more progressive U.S. cities (Seattle, Portland, Ann Arbor, College Park, Boulder among others) could lead this initiative. **A new urban zone structure that encompasses urbanity (people and places) will emerge over the next decade**.

66. For many reasons, the era of the live-on-campus college degree is coming to an end. Many colleges depend on public subsidies to balance their budgets, and while endowments help, colleges and universities are faced with rising costs and tuition levels often beyond the reach of most families. Approximately 7 out of 10 graduating college seniors have student loan debt, and currently $1.4 trillion in student loan debt is outstanding; nearly 40 million Americans carry student loan debt. Specifically, many law schools are or soon will be facing financial challenges. Online education is becoming a popular option that negates the need to "come to campus," and digital platforms capable of tracking students' progress will be commonplace by

Office Portfolio Sales Are Slowing Down

Year	National Transaction Summary ($ Billions)			
	Individual	Portfolio	Entity	Total
2010	$39.4	$7.8	$1.1	$48.3
2011	$57.2	$9.9	$0.5	$67.6
2012	$67.9	$11.6	$2.6	$82.1
2013	$80.3	$20.5	$5.2	$105.9
2014	$96.1	$27.8	$2.5	$126.4
2015	$109.3	$36.7	$4.6	$150.6
2016	$113.7	$23.3	$6.4	$143.4
2017	$104.6	$24.7	$2.6	$131.9

Industrial Portfolio Sales Are Improving

Year	National Transaction Summary ($ Billions)			
	Individual	Portfolio	Entity	Total
2010	$12.4	$8.7	$0.01	$21.1
2011	$19.0	$8.4	$7.9	$35.3
2012	$25.5	$11.9	$0.2	$37.7
2013	$29.2	$10.8	$6.8	$46.8
2014	$35.6	$11.6	$3.4	$50.6
2015	$38.6	$18.4	$20.6	$77.7
2016	$42.1	$15.0	$3.2	$60.3
2017	$45.9	$21.3	$5.0	$72.2

Retail Portfolio Sales Are Slowing

Year	National Transaction Summary ($ Billions)			
	Individual	Portfolio	Entity	Total
2010	$17.2	$6.8	$0.01	$23.9
2011	$26.2	$9.1	$9.4	$44.7
2012	$41.7	$12.4	$3.7	$57.9
2013	$41.1	$16.0	$6.0	$63.1
2014	$54.0	$19.5	$12.4	$85.9
2015	$60.9	$22.2	$7.2	$90.3
2016	$56.2	$16.3	$4.7	$77.1
2017	$48.0	$10.8	$4.6	$63.4

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2025. The “school year” will be replaced by on-demand, online classes that enable the student to set his/her education pace. Students will be able to take classes online from one university and transfer the credits to another. Over the next decade, colleges and universities will unbundle their curriculum to focus on skills and learning, not semesters. For the real estate industry, the “mobile and digitally connected” university student may not reside at the college. As a result, the future of some college towns will be in jeopardy.

67. **By 2025, approximately 65 million U.S. workers (or 40% – 45% of the U.S. workforce) will be freelancers, temps, independent contractors and *solopreneurs***. The average U.S. worker telecommutes two days per month, and 37% of all U.S. workers say they have telecommuted. At Aetna, for example, over 31% of their employees telecommute, resulting in a 15% - 25% decline in occupancy costs. According to Global Workplace Analytics, 50% of workers have jobs that could be performed remotely. A co-working space trend is well underway. **Within a decade, co-working space could total 5 million – 7 million sf.** When this is included with the fact that nearly **3% of the U.S. workforce works remotely more than half the time,** the configuration and utilization patterns of U.S. office space will change dramatically. Office tenants will want more “plug and play” space designs.

68. Each year, nearly 9.2 billion tons or 70% of America’s freight move over the road in more than 3 million vehicles. However, **an expected shortage of 240,000 drivers by 2020 will hasten utilization of rail to move goods**. By 2025, there will be a dramatic increase in the construction of warehouse/distribution facilities along, adjacent or near to rail lines. Perhaps Warren Buffet’s $26.5 billion buyout of BNSF railroad is a precursor that investors see tremendous upside. Today the U.S. freight industry is around a $60 billion industry consisting of 140,000 rail miles. Expect a significant increase in shipping by rail over the next 10 years.

69. There are 70 million – 80 million dogs and 74 million – 96 million cats in the U.S. The pet industry is nearly a $60 billion industry and **approximately 62% of households have a pet, with 46% of households having more than one pet**. Approximately 37% – 47% of all U.S. households have a dog, and 30% – 37% have a cat. By 2025, it will be common to see dogs in workplace environments and pet sitters/walkers a common feature in apartment and office buildings. Expect to see growth in luxury pet spas, arranged pet play dates, expansion of premium services and specialized products and services.

70. By 2020 (barring a major recession), **interest rates may increase by 225 bsp – 250 bsp or more; and by 2025 interest rates could be up nearly 250 bsp – 350 bsp from their 2015 low**. The prime rate, according to analysts, is expected to rise from 3.5% today to around 6% by 2025. Any rise in borrowing rates for consumers or for real estate investments will have a dampening impact on transactional volume and pricing. Do not be surprised to see interest rates rise and then slide back to 2014 – 2015 levels over the next decade…before they rise again.

71. **Today 21% of Americans are “on-the-run” eaters**. Two-thirds of them are female, and 51% are in one- or two-person households. This $90 billion industry provides convenience and value. Over the next decade, the growth of companies such as Blue Apron, Plated, Hello Fresh and Home Chef will capture a portion of this growing segment. Grocers such as Whole Foods, Kroger, Safeway and Publix, among others, are expanding the fresh food meal options. **Within a decade, nearly 30% – 35% of Americans will be on-the-run eaters**, and nearly half of today’s on-the-run eaters will be between the ages of 30 and 56. Grocery stores must add drive-through windows, make-a-meal Internet options (pick-up or delivered) and other on-the-go meal options.

72. **Within a decade the U.S. will face a retirement crisis**. The percent of workers covered by a traditionally defined benefit pension plan that pays a lifetime annuity has declined from 38% to 20%. The percentage of workers in the private sector whose only retirement is a defined pension plan is now 10%, down from 60% in the early 1980s. A staggering 68% of working-age people (25 – 64) do not participate in an employee-sponsored plan. Only 7% of Fortune 500 companies offer traditional pensions to new hires. According to recent studies, **the U.S. retirement savings**

deficit is between $6.8 and $14 trillion. Forty-five percent of working-age households do not have any retirement account assets. According to Fidelity Brokerage, a couple retiring in 2015 with average life expectancies of 85 for a male and 87 for a female will have $250,000 in healthcare costs. Only 22% of today's workers are very confident and 36% are somewhat confident that they will have enough money in retirement. Twenty-eight percent of workers have no retirement savings. For the real estate industry, the retail assets not considered "essential" will suffer. Affordable housing (senior and conventional) and self-storage will flourish.

73. Today there are around 15 million single-family rental housing units and another approximately 8 million two-to-four family homes. Thirty-four percent of single-family rentals are in center cities. **Approximately 25% of all center city households spend over 50% of their income on rent**. A projected 59% of new households formed between 2010 and 2030 will be renters. By 2025, the U.S. homeownership level will have declined to a percentage of around the mid- to high 50s, the percentage of single-family rentals will increase and **the number of renters over the age of 65 could reach 50% of the overall renters growth**.

74. Over 50% of Americans have rented, leased or borrowed cars, bikes, tools, appliances, clothing and homes in the past year. In the next decade, expect that to rise to 75% as "dis-ownership" and ride-sharing become the norm. **By 2025, the sharing economy worldwide could exceed $335 billion**. The impact on retail real estate will be significant. Apartment buildings will be require to have/add "storage" features (on-site or off-site) to aid this new collective consumer lifestyle within an ever-shrinking and confined environment.

75. Within a decade, the number of public real estate investment trusts will continue their consolidation or shift from a public to a private enterprise. The primary drivers will be tax implications, compensation issues and reluctant leadership. There are around 150 public-equity REITs with a market cap over $1 billion, 42 with a $5 billion to $10 billion market cap and 20 REITs with a market cap over $10 billion. **By 2025, the number of REITs with a market cap over $10 billion will double.**

76. **Watch for Google to increase ownership and/or control over Auction.com.** Expect Auction.com to pursue an IPO over the next few years. While Google Capital says it has "no plans" to acquire Auction.com, the information/data reservoir and market dominance could change that thinking over the decade. Expect continued accelerated growth in online real estate auctions, possibly including leases.

77. **By 2025, the real estate industry should see the first of many "floating cities" under construction** with a 2030 date for occupancy. As many as 5,000 people will live in each city. The Shimizu Corporation ("Ocean Spiral"), the Seasteading Institute, and the Chinese government could be the first adapters. By 2050, there could be as many as 1,000 floating cities. CBRE and others may open an "Aquatic Leasing Division."

78. **Watch for a National Carbon Footprint or Ecological Footprint Rating on all real estate (re)development projects**. Real estate developers will need to achieve a "minimum" score to receive building permits or pay a large fine or tax on the building's inefficiency.

79. Tenants increasingly will demand service clauses and service standards in lease agreements. **We will see a shift by 2025 from leasing space to leasing a workplace environment.** From lighting to HVAC, from noise to cleanliness and from safety to security, real estate owners should "step up their game" to compete for valued tenants. Every best–in-class office building owner and operator will have a Workplace Environment Specialist on staff to engage each Tenant in creating a positive, motivating environment. Think what would happen if the Ritz Carlton, Langham Hotels, the Four Seasons or Marriott were the onsite property management.

80. **By 2025, over 75% of employees at every real estate service company will have at least one certification or designation** (MBA, USGBC, CPM, CCIM, CRE, MAI, CRB, CRS, ALC, ARM, CRP or SRES). Watch for national or state legislation to mandate some form of designation or

certification to work as an Asset Manager, Property Manager, Leasing Agent or Maintenance Associate by 2025.

81. Watch for the emergence of one or more real estate enterprises that will specialize in securing, controlling and leasing water rights, waste disposal, carbon credits, farming rights, energy production and/or ocean aquaculture. **Control the site and you control the outcome.** However, the debate on who owns riparian and flowing underground water could be in continuous litigation until 2025.

It Happens By 2025!

1. The Utica Shale Basin in Pennsylvania, West Virginia and Ohio (potentially the nation's largest untapped natural gas reserve) could spell a real estate and economic boom for their area.
2. Robotics could be the engine that drives an economic boom to Ohio and the Midwest. It isn't about jobs…it is all about production (mostly computers, electronics, chemicals, automotive and appliances).
3. The Internet of Everything will exceed 100 billion devices and generate $19 trillion in newly created value.
4. Watch for Apple, Microsoft, Google, SAP and others to enter the healthcare industry creating "democratized healthcare."
5. Blockchain technology will be perfected by 2025 that will transform how Americans and the world stores, accesses and interacts with data from bitcoin transactions.
6. By 2025, we will have observed the first humans to "hack" their own bodies through brain-enhancing drugs and wearable technologies.
7. Within a decade, we could see 15 – 25 country "mergers" to serve and save their economic futures.
8. Over 50% of the world's largest, publically-traded companies in 2025 did not exist in 2015.
9. By 2025, leading hotel firms will be able to stimulate and simulate the experiences of their hotel (smell, feel, taste and experience), from a mobile phone or computer.
10. Genome engineering will be able to prevent Type I and Type 2 diabetes.
11. By 2025, all forms of petroleum-based packaging will be gone…replaced by biodegradable alternatives.

"There will be at least one major cyber-attack that could result in lives lost and billions of dollars in losses."

82. **By 2025, a new wave of construction technologies and processes will reduce the time required to complete a construction project by 20% - 30%, reduce labor costs by 30% - 40% and dramatically reduce (60% - 70%) materials inefficiency**. Modular building technologies will flourish among infill properties, free-standing buildings, clinics, retail facilities, and "local" free-standing business office buildings. The tower at PNC Plaza in Pittsburgh or the Edge office building in Amsterdam are examples of the latest trends for smart buildings. In Pau, France, modular construction has created a student dorm facility with rooms of 507 sf. Some leading sustainable, prefab housing firms to watch over the next decade are LivingHomes, Connect:Homes, Stillwater Dwellings and Method Homes.

83. The Hispanic population (around 55 million today) will remain concentrated in three states: California, Texas and Florida. By 2025, those states will be home for over 50% of all U.S. Hispanics. With a median age of 29, this growing demographic sector had $1 trillion buying power in 2015. **By 2025, Hispanics could account for as much as 15% of total U.S. buying power. Within a decade, Hispanic wealth will triple to between $2.5 and $4.4 trillion or 2.6% - 3.2% of the U.S. total wealth. By 2025, there will be nearly 60 million Hispanics in the U.S.** The opportunities for real estate investors and developers are unlimited. From apartments (54% rent), single-family homes (only 46% of Hispanics own their home), grocery-anchored retail centers to out-patient healthcare facilities, real estate companies should not overlook this growing segment of the U.S. population.

84. Foreign investors purchased approximately $70 - $73 billion in commercial and multifamily assets during 2015. The growing strength of the U.S. economy, the low interest rate environment, liquidity, transparency and global instability are some major drivers of this capital trend. **Over the next decade, foreign investors will continue to be 20% - 30% of the buyers of U.S. real estate assets**.

85. Sustainability, energy conservation and recycling will be ongoing priorities of real estate firms through 2025. Today, there are more than 200,000 LEED professionals and nearly 30,000 LEED-certified commercial projects (4.25 billion sf). Over $100 billion of green materials will be used over the next decade. **By 2025, there will be over 300,000 LEED professionals, more than 100,000 LEED-certified commercial projects and over 5 billion sf of LEED-certified projects**.

86. "Water, water everywhere but not a drop to drink**."** **Over the next decade, expect water shortages to impact the "desirability" of several U.S. cities**. Markets such as Los Angeles, Tucson, Atlanta, Las Vegas, Ft. Worth, Phoenix, San Antonio, the San Francisco Bay Area and Houston are expected to face severe water shortages in the relative near-term. The impact on real estate assets (landscaping, cleaning, air conditioning, water amenities or features and building operations) will be significant. Expect legally mandated restrictions that could dramatically impact the workplace, living and shopping environments. Investors should be very careful when investing in markets likely to experience shortages of "natural" resources.

87. Within a decade the rapid decline/presence of "city fathers," who cared about the community in which they lived and started/grew their business, will create an urban void that is commoditizing several U.S. cities. **Successful cities in 2025 will be an expression of collective and concerned will**. Cities today, where core assets are 50% - 70% or more owned by entities/investors residing thousands of miles away, can never actualize this collective civic commitment. Legacy real estate leaders, prior to 2000, contributed regularly to causes and activities that improved communities. In the absence of real estate leaders who created and enhanced the community through their buildings and philosophy, politicians attempt to fill the void. By 2025, unless this pattern changes, 65% of the largest cities in America may lose their collective community appeal.

State Rankings / 2015 Entrepreneurship Index

Best Rank	Best States	Worst Rank	Worst States
1.	Montana	50.	Wisconsin
2.	Wyoming	49.	Alabama
3.	North Dakota	48.	Pennsylvania
4.	Colorado	47.	Minnesota
5.	Vermont	46.	West Virginia
6.	South Dakota	45.	Tennessee
7.	Alaska	44.	Indiana
8.	Idaho	43.	New Hampshire
9.	Florida	42.	Iowa
10.	Nevada	41.	Michigan

Source: Kauffman Foundation.

88. **The de-industrialization within the U.S. will continue through 2025.** The Institute for Supply Management's Purchasing Managers Index is around 50, while exports are around 47 – 48, both strong indicators of a changing marketplace. U.S. exports are declining, and U.S. factory capacity is around 77 (anything below 80 is considered weak factory output). There are early signs of a protracted slowdown that will not emerge until the early 2020s.

89. **The "Voice of the Customer" will carry more value and weight in the growth and reinvestment decisions of real estate companies over the next decade**. The customer experience, the ease of the customer interaction, social media chatter and building customer loyalty will be cornerstones for success. CEL & Associates, Inc., the nation's largest surveyor of tenant, resident and client opinions in the real estate industry, has found a significant difference in operating performance between buildings with satisfied occupiers and those who are not. Real estate firms that cannot cover annual overhead expenses with the profits from recurring, satisfied

clients will struggle. **By 2025, best-in-class real estate firms will generate profits from recurring clients that cover 100% of corporate overhead**.

90. Expect significant tax reform, unlikely to occur until 2021 or beyond. Tax reform will not occur prior to a Presidential election (2016 and 2020). The biggest impending tax impact will be the self-employment tax. If by 2020, 40% or more U.S. workers will be classified as "contingent" workers (1099s and "onetrepreneurs"), paying taxes quarterly will be a major challenge for many. This tax rate generally will be 30% of last year's income, plus 15% for FICA. **Just imagine what Brokers will have to pay with no guarantee that last year's commissions will be duplicated in the current year**. There will be a growing trend to put Brokers on the payroll to retain and motivate talent.

Best And Worst States To Make A Living

Rank	Best States	Worst States
1.	Texas	Hawaii
2.	Washington	Oregon
3.	Wyoming	Maine
4.	Virginia	West Virginia
5.	Illinois	Vermont
6.	Michigan	California
7.	Colorado	Montana
8.	Ohio	South Dakota
9.	Delaware	Rhode Island
10.	Utah	Connecticut

Source: Forbes 2015.

91. In 2015, approximately 28% of Millennials were married. This is dramatically below the nearly 64% of the Silent Generation at the same stage in their lives. About half of Baby Boomers and 38% of Gen Xers were married when their generation was ages 18 to 33 years. **By 2025, many of these unattached Millennials will become renters by choice**. It is clear that the Gen Zs (born in the late 90s and early 2000s) will continue America's shift to a rental-based society.

92. By 2025, a **growing number of U.S. businesses will move downtown** (urban or urban/suburban) to:

- Attract and retain the best and the brightest talent.
- Locate proximate to walkable services and amenities.
- Build brand identity and company culture from being "in the center of things."
- Support and encourage creative collaboration.
- Centralize operations and reduce overall operating costs.
- Be closer to customers, strategic partners, lenders, financial intermediaries and competitors.
- Generate greater results while investing in the community.

Cities that are vibrant and gateways to business networking, smart growth, arts and entertainment, multi-modal transportation and support public-private partnerships will flourish over the next 10 years. Innovation will be one of the key market drivers for economic growth over the next decade. Cities and areas like Seattle, Nashville, Salt Lake City, Denver, Austin, Dallas, Minneapolis, Portland, Alexandria, Houston, Silicon Valley, Cambridge, San Francisco, San Diego, Charlotte, San Antonio, southern Florida among many others, are markets to watch.

93. **The Midwest and Northeast, home to nearly 39% of working age Americans will likely experience a 3% population decline through 2030**. In 2015, the top three states for "move outs" were New Jersey, New York and Illinois (50% of residents in a recent survey want to leave). According to Gallup, 33% of all people in the U.S. want to move to another state. Real estate firms intent on prospering through 2025 should become more geo- and customer-centric (vs. asset- or service-centric) in their business model, business planning and business practices.

94. **The $5 billion battle for the American dinner could heat up over the next decade**. Expect the meal-kit segment of the market to grow to nearly $4.5 billion over the next 10 years. Apartment owners will need to provide temperature-controlled storage bins/lockers for a resident base that prefers meal organization to be done for them. The USDA estimates that 31% of food available for consumption at the retail and consumer levels goes uneaten each year. The top 25 U.S. food and beverage companies have lost an equivalent of $18 billion in market share since 2009. With meal kits, dining out is no longer a reluctant option. By 2018, online grocery will be a $100 billion business. **By 2025, online grocery could exceed $250 billion**. Perhaps this is one of the major reasons why Whole Foods is introducing a discount grocery store concept.

95. According to PwC, **annual spending on infrastructure projects will grow to $975 billion**. More than $3.6 trillion in infrastructure spending is needed by 2020. "Old" urban markets, which tend to have greater and larger infrastructure needs, could pass these costs on to the taxpayer and/or to property owners. Real estate investors should be very careful if investing in markets with old, decaying infrastructure (roads, sewer, water, rail, parking, bridge and government/education buildings). **Urban environments must evolve to align with resident aspirations**. Compare and contrast Seattle or Nashville with, say, Baltimore (cities of similar size) to highlight where opportunities will be sustainable (or not) over the next 10 to 15 years.

96. **Housing affordability will be the political focus over the next decade**. The combination of lower household income, proximity to places of employment, transportation costs and availability of various services and amenities have created "financially-unable-to-live-and-work" cities for many Millennials. Think Silicon Valley, San Francisco, New York City and Washington, D.C./Alexandria. Watch for the emergence of a national housing policy that could include rent control and/or affordability provisions for all for-rent residential properties. If current borrowing patterns continue, the $1.0 trillion in student debt will reach $2.0 trillion by 2025. This "debt-for-diploma" system will lead to a total lifetime wealth loss of $4.0 trillion for indebted households.

97. **The U.S. labor force participation rate (now nearly 63%) is close to its lowest level since 1977**. This trend is a result of economic policies and workforce priorities over the past eight to 10 years, aging Baby Boomers who are not retiring, offshoring, low level of retirement savings for many Americans, immigration policies and consumer uncertainty. **By 2025, expect the decline in the labor force participation rate to parallel the declining homeownership rate**. Both rates could drop into the high 50s. The real estate industry will see continued demand for affordable housing.

98. **There will be a growing generation of under-educated workers that will unfortunately create a "servant" class of employees** who will pose significant challenges to real estate firms seeking to hire great talent (37% of real estate firms indicate that they are "having difficulty" in filling jobs due to a lack of "qualified" talent) and owners/operators of apartment and retail assets seeking higher rents and occupancy levels. The need for "affordable" housing and "inexpensive" retail options will likely accelerate. Expect the divorce rate to stay high, the underground economy to flourish (think Uber, Airbnb, Lyft on steroids) and retirement may not be an option for many. A lack of qualified talent will likely mean more outsourcing and the use of Independent Consultants to fill the gap.

99. **Approximately 81% of the U.S. population lives in urban areas**. Nearly 40% of the U.S. population lives in counties along a shoreline. In California, 95% of the population lives in an urban area. Today there are 486 urbanized areas in the U.S. with an average urban population density of over 2,500 people per square mile. Charlotte, Houston and Austin are among the fastest growing urban areas, while the New York City/Newark market area remains the most populous urban area. **By 2025, America's youth will be attracted to cities such** as Seattle, Salt Lake City, Houston, Dallas/Ft. Worth, Riverside/San Bernardino, San Antonio, Raleigh, Atlanta, Nashville, San Francisco/Silicon Valley, Chicago, Charlotte, Denver, San Diego and Boston, among others. Over the next decade, 80% of real estate activity will take place on less than 10% of land in the U.S.

100. I waited until #100 to give you one BHAG to end these predictions. **By 2025 the smartphone we all depend upon will be gone/replaced by artificial intelligence, sensory-based, lifestyle remote controls, host-based (this means you can bolt on and detach various modules based on where you are and what you need), bendable, with 20-year batteries, floating screens (the "Quantum Photonic Image"), and ability to move seamlessly among IMS-enabled networks**. By 2025 you will be able to walk around inside your photos, take virtual tours and experience activities or places from the palm of your hand. By 2025, cell phones as we know them will be gone, and the new device will be foldable (a phone, then a tablet, then a movie screen and back to a phone). Because it is linked to your wearable technology, workplace accessibility/network and home environment, the outlook for the real estate industry will reside in a device utilized by an individual vs. today, where the individual controls the device. By 2030 cell phones will be replaced by invisible communication devices plugged into our bodies that are intuitive and via smart contact lens, you will see everything 360. These next 10 years should be exciting.

I welcome your comments, feedback, insights and perspectives.

Regards,

Christopher Lee

January 1, 2016

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