

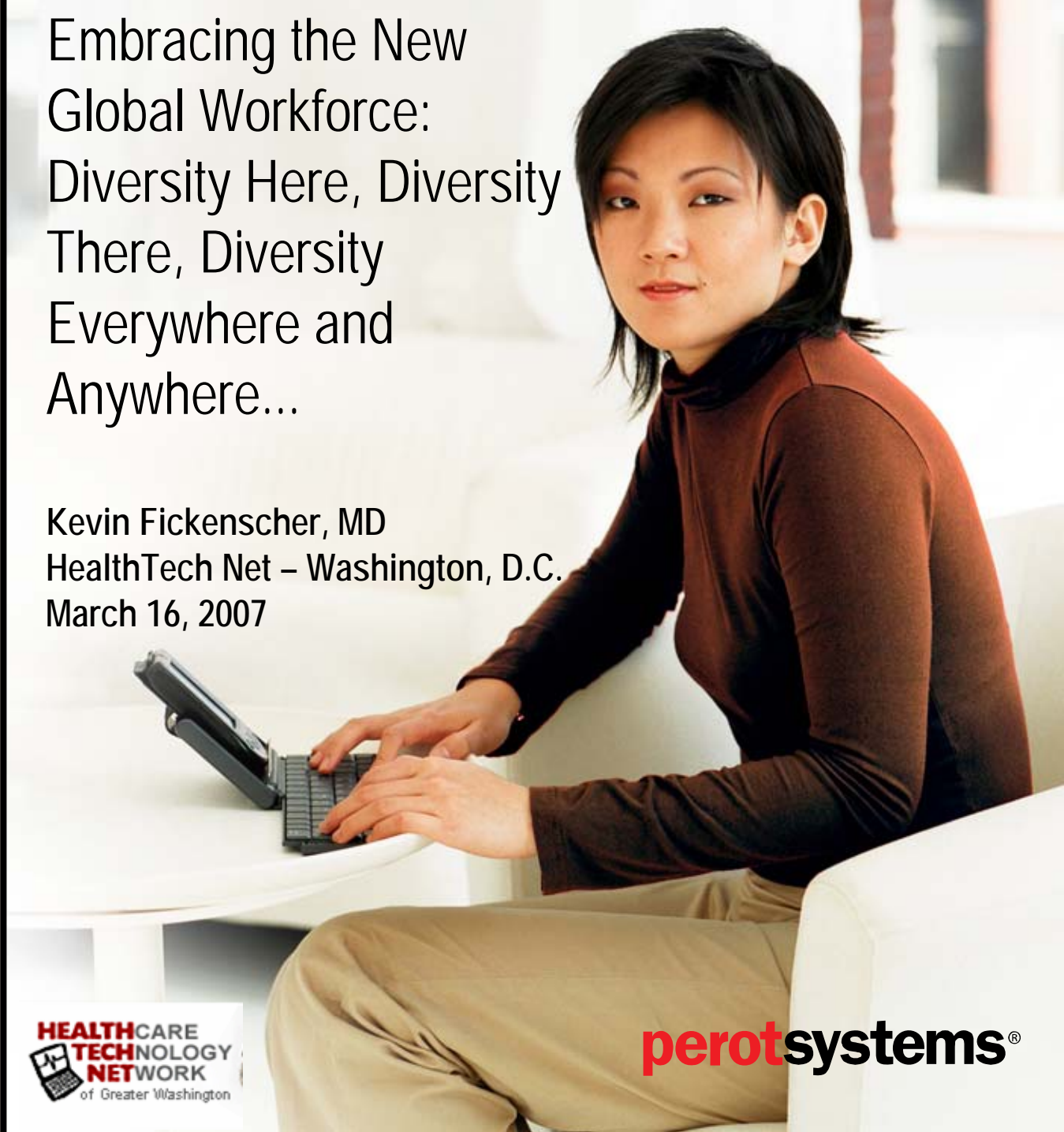
律
波

Embracing the New
Global Workforce:
Diversity Here, Diversity
There, Diversity
Everywhere and
Anywhere...

Kevin Fickenscher, MD
HealthTech Net – Washington, D.C.
March 16, 2007



perotsystems®





津波

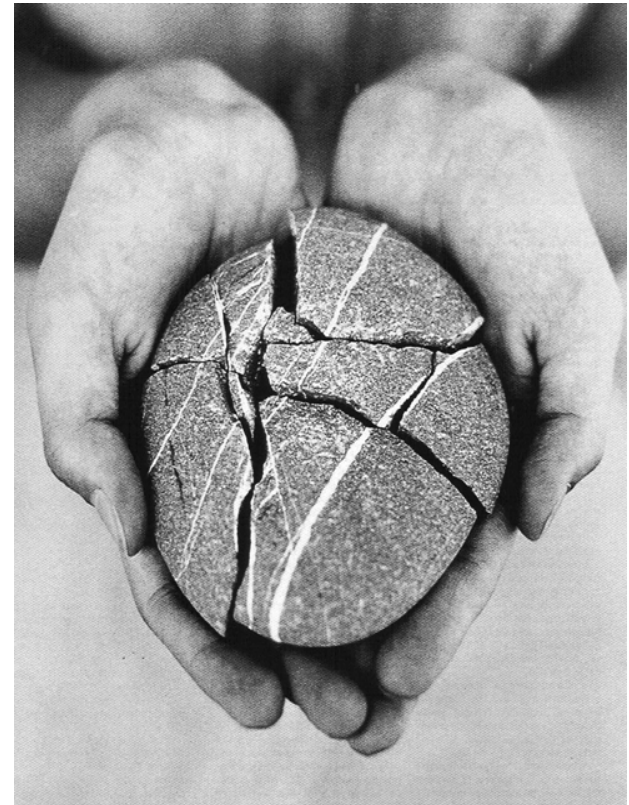


"The real voyage of
discovery consists not of
finding new lands
but of seeing the territory
with new eyes."

Marcel Proust
Author
Remembrance of Things Past

津波

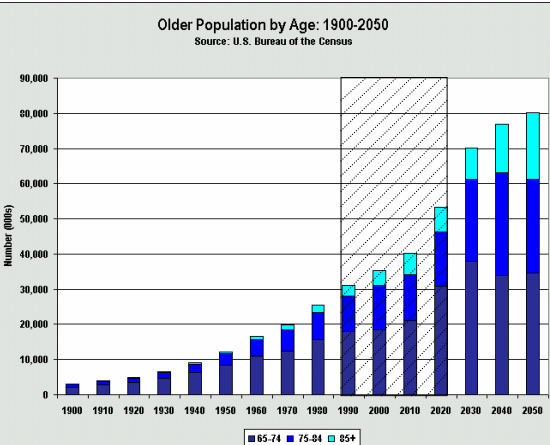
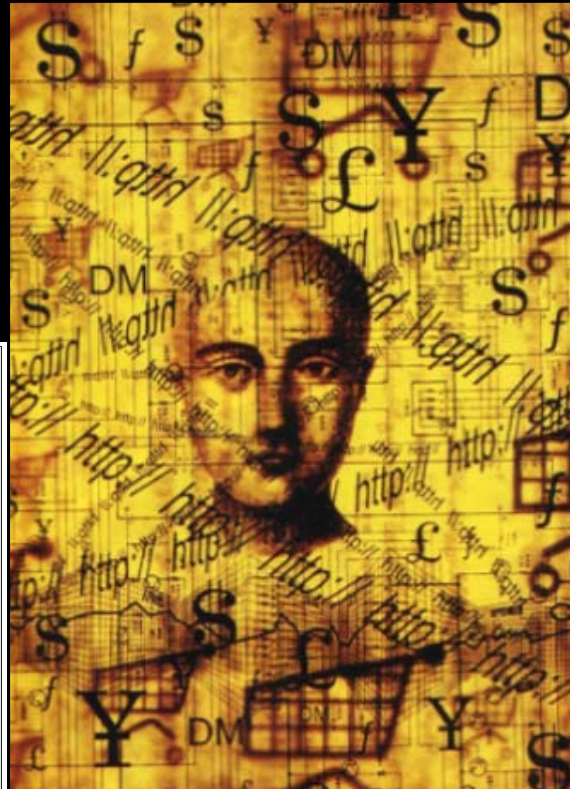
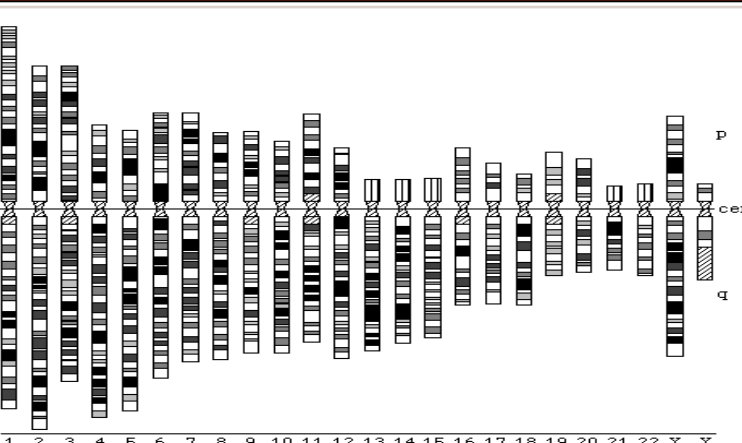
- Point of View...
- Forces Precipitating Change in Our Approach to Healthcare Delivery
- What's Real and What's Not – Today...



津波

- Society is demanding that health care...
 - ↓ Costs
 - ↑ Quality
 - ↑ Service
- Inherent incentives of healthcare are disparate, inconsistent and dysfunctional – causing significant challenges for leaders...
- Health care is moving inextricably from a professionally dominated *information theocracy* towards an *information democracy*...
- The world is changing very, very rapidly – in ways we could never have even predicted a short five years ago...

Broad Trends Driving Healthcare Today...



Consumerism Comes to the Forefront...



*MIDWEST EXPRESS
AIRLINES*



SAKS
FIFTH
AVENUE



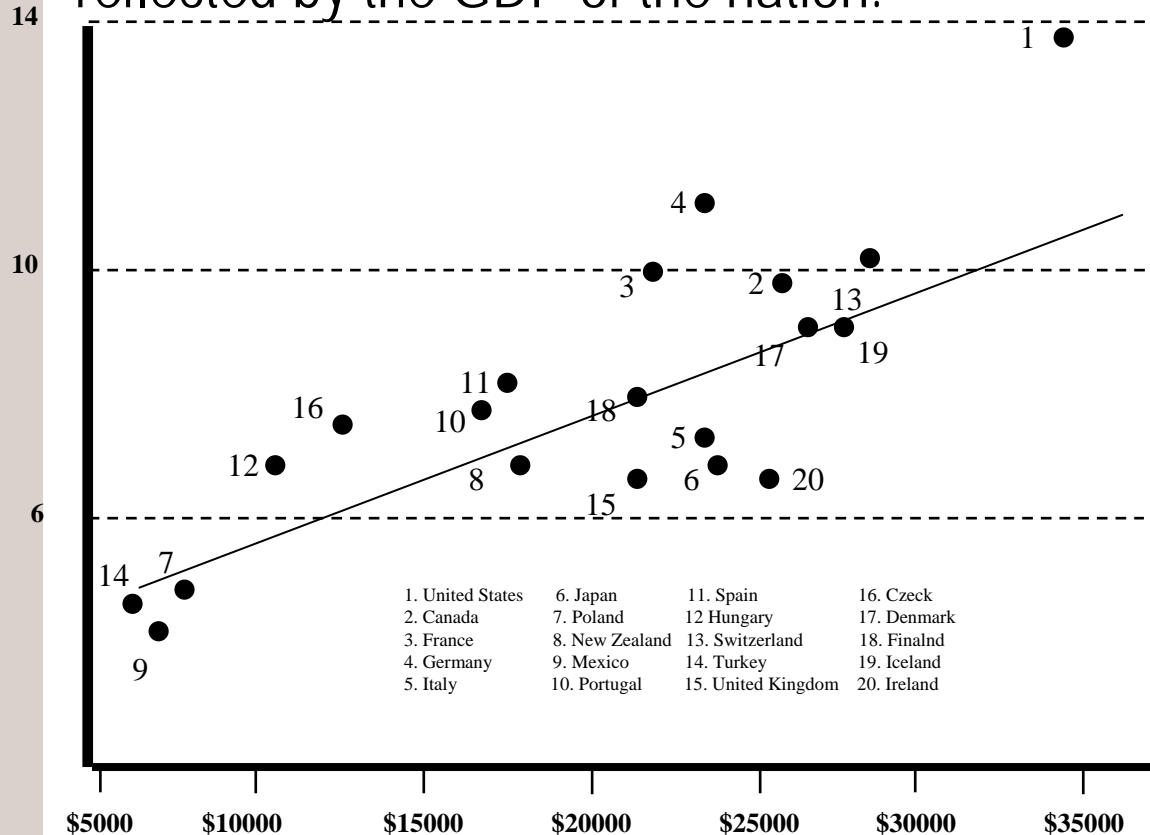
Thesis #1: Trends Are Trends For A Reason...

律
波

- Continuing consolidation of the industry
 - Growing disparity between the economic haves and have nots of healthcare
 - Growing dominance of the organized physician groups – even into rural areas
- Practice complexity requires greater resources
 - Need sophisticated practice management systems
 - Need better, clinical information technology infrastructure
 - Need decision support systems for patient safety and quality enhancement
- Public demands for quality and service increase, requiring transparency among healthcare providers
 - While boutique medicine will never go away, it will be increasingly boutique
 - Infrastructure requires to meet quality and service demands – need to spread the investments over a larger number of providers

Thesis #2: Follow The Money...

Among the developed countries, health care spending is directly correlated to levels of economic development as reflected by the GDP of the nation.

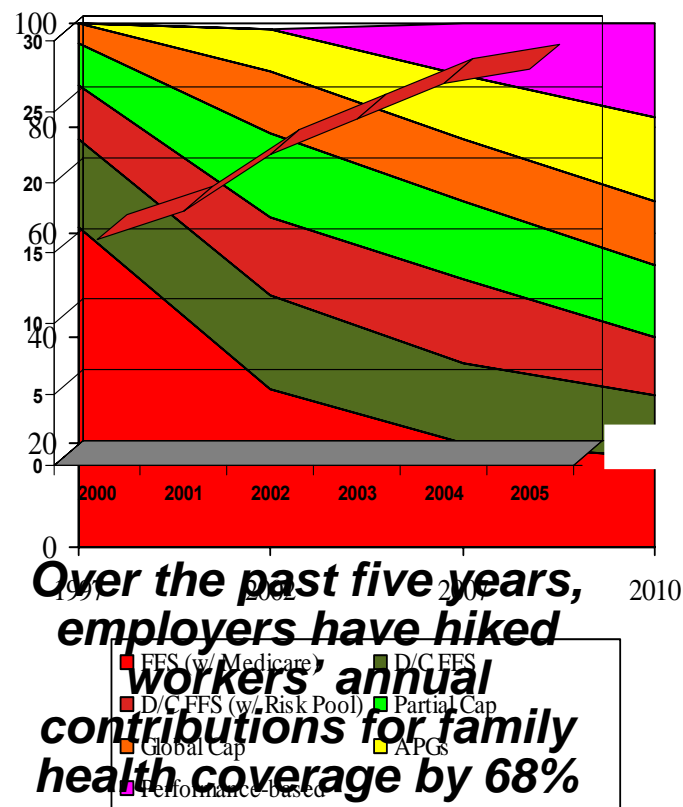


連波

Thesis #2: Follow The Money...

- Outcomes reimbursement instead of volume reimbursement
 - The results are now valued
 - With outcomes reimbursement, it's better to have 50 physicians who provide the right care at the right time in the right place for the right reasons than to have 100 physicians with no standards
 - Example: Humana

津波

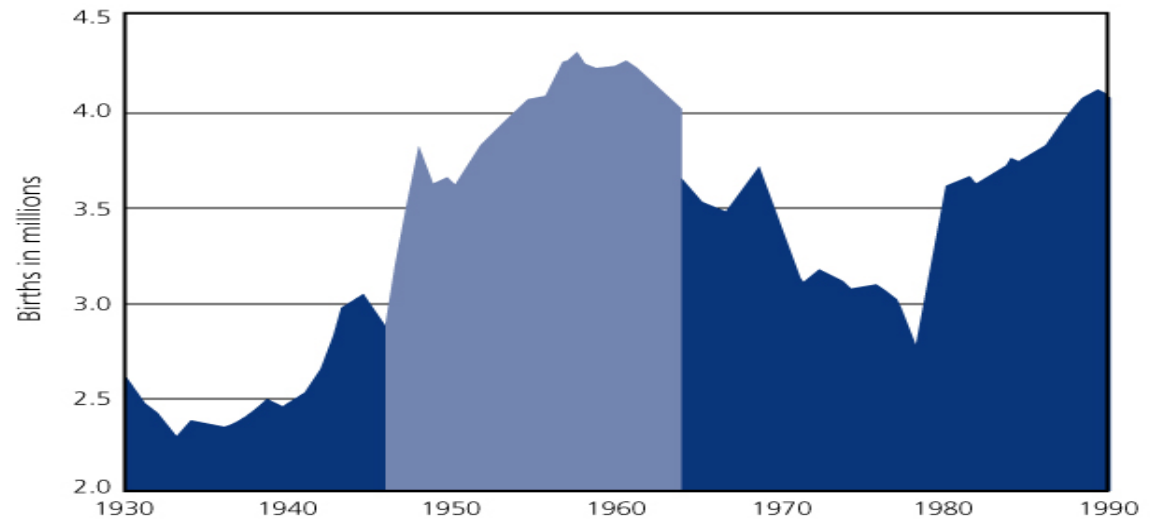


Source: Institute for the Future, *Healthcare Horizons Ten-Year Forecast*, January 1999; and, Kaiser Family Foundation/HRET 2005 Employer Health Benefits Survey

Thesis #3: Demographics Trumps Everything

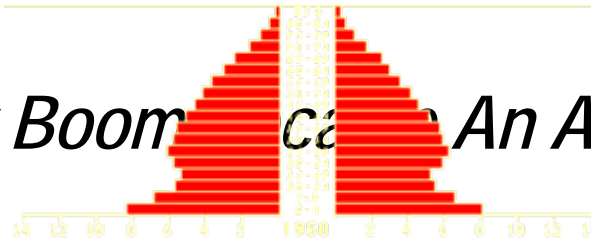
陣波

The baby boom: 1946 – 1964



Source: U.S. Census Bureau

And, the Baby Boom caused An Age Wave

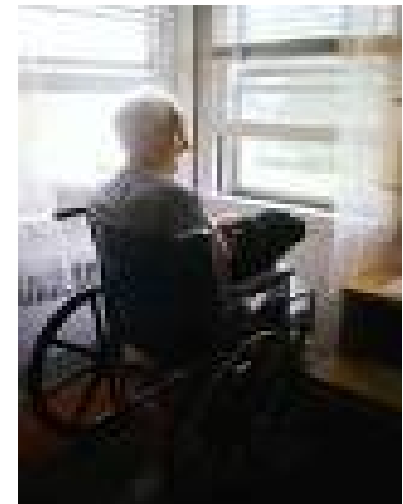
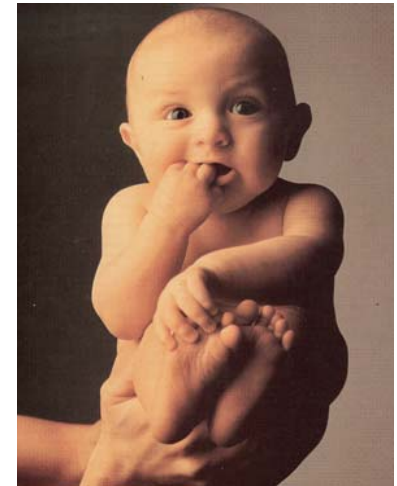


the coming shortage of skills and talent Ken Dychtwald, Tamara J. Erickson, Robert Morison. 2006.

Thesis #3: Demographics Trumps Everything

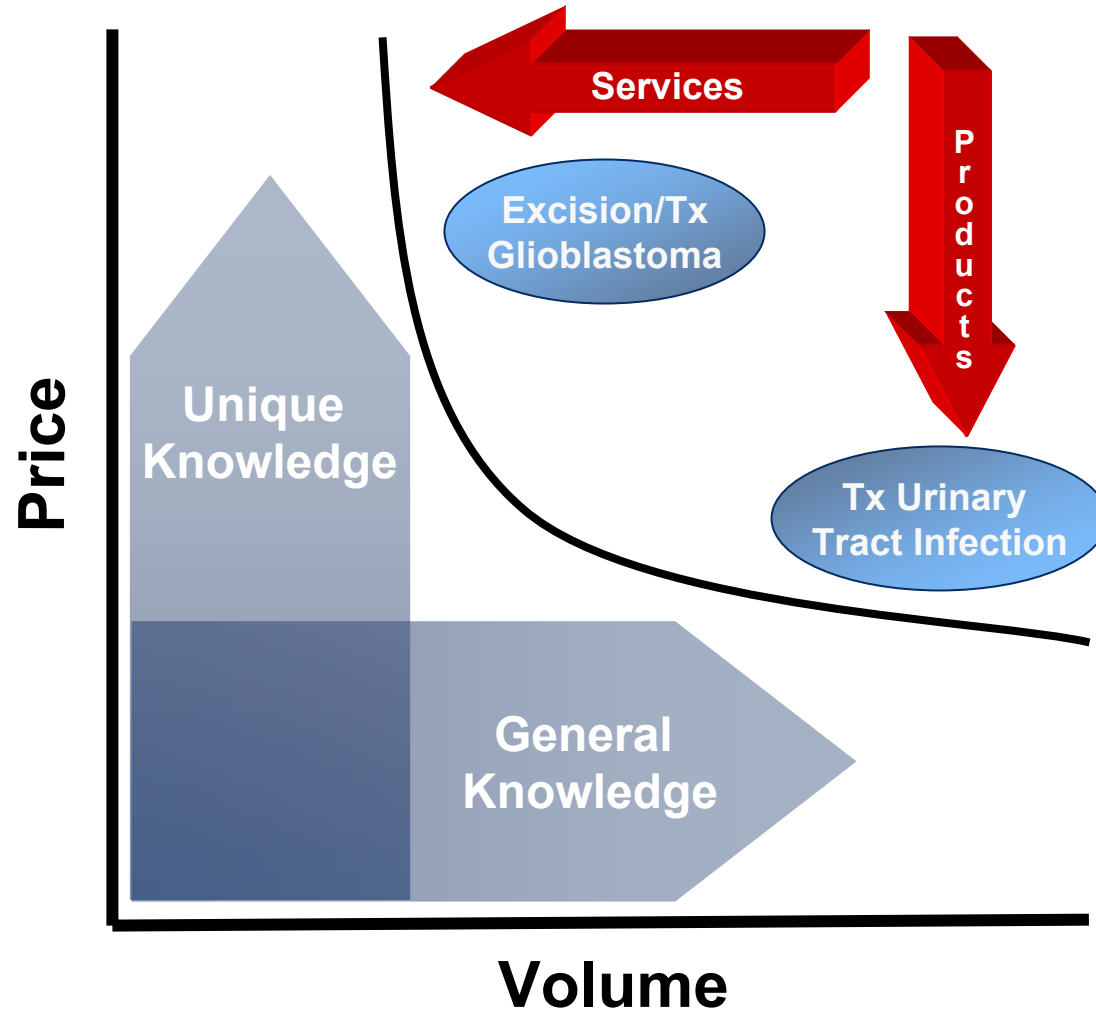
律波

- Boomers transform society
 - Clothing Housing
 - Automotive Work
- By 2010 – women will control 60% of all the wealth in the USA = a move to the matriarchal society?
- Boomers have not left a single industry intact that they've engaged
- And, the looming question:
What will happen to healthcare?
 - What constitutes retirement?
 - Where will care be delivered?
 - Who will deliver it?



Thesis #4: Remember The Value Curve...

津波

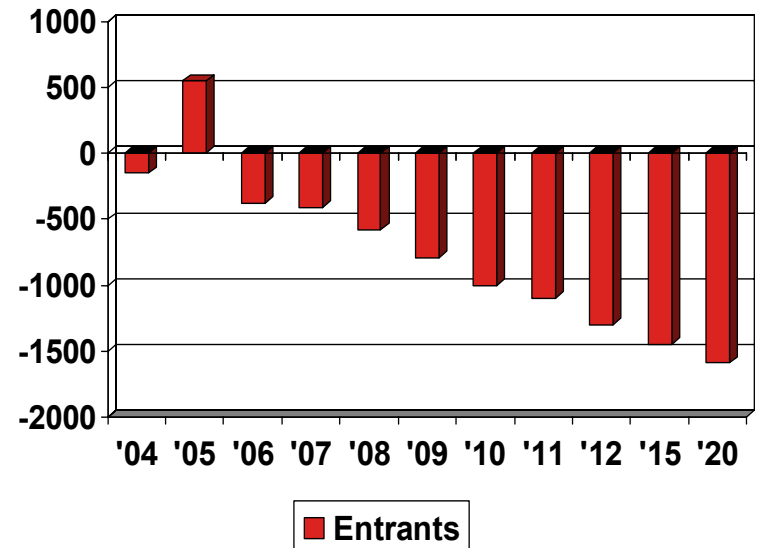


Source: Downes L., The Industry Standard, October 9, 2000

Thesis #5: Neé Vosh Moshna

津波

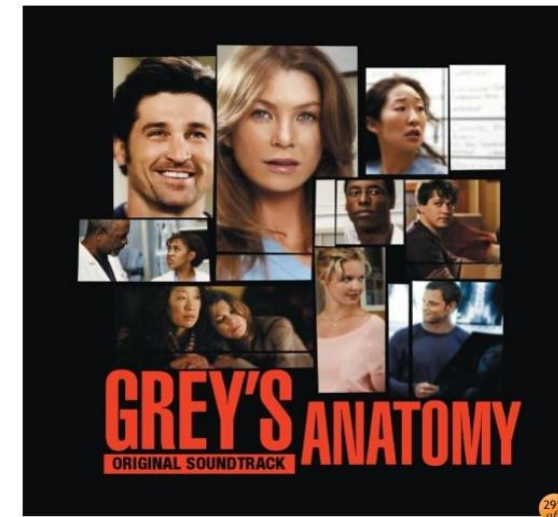
- By 2009, a shortfall of nearly 2 Million cumulative workers will exist with the trend only getting worse over time – Net Worker Deficit (2002 – 2012) =
 - Technical 2,959
 - Providers 1,849
 - Other 1,088
- The Net Worker Deficit occurs despite the fact that ALL healthcare professions will grow in total numbers between now and 2012
- We will be doing more work with the same resources
- If we do the same work, the same way...the system will fail



Thesis #6: The Type of Provider Will Change...

津波

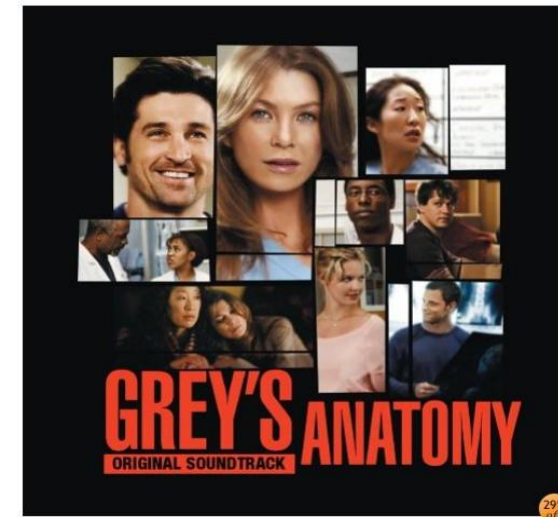
- Baby Boomer Cliff – the 1970s physician training investment will reduce work hours + retirement over the next decade
 - 1970 active physicians = 311,203¹
 - 2006 active physicians = 890,000¹ with 28% over the age of 55
 - USA doubled MD supply from 1970 to 1997
 - But...supply inadequate to meet future demand
- The New Physician
 - Women represent nearly 50% of entering medical school classes
 - 25% of all USA physicians are international graduates with the vast majority foreign-born and 50% practice primary care compared to 33% of USA graduates
 - 40% originate from India (19.5%), Pakistan (11.9%) and Philippines (8.8%)



Thesis #6: The Type of Provider Will Change...

津波

- Inadequate physician supply
 - Lifestyle choices and residency selection
 - Immigration restrictions
 - Changing productivity patterns
- NPPs not previously considered in physician workforce projections
 - Licensing standards
 - Increasing availability of NPPs
- Projection: by 2015
 - = 275,000 NPs, PAs, and CNMs
 - = 150,000 chiropractors and acupuncturists
 - = 100,000 other providers (e.g. psychology, anesthesia, optometry)
- Combined output of NPPs in 2015 = 65 physicians per 100,000 w/ 1/3 of the output already in place
- Result = growing reliance upon NPP supply for primary care



29% off

Thesis #7: Dis-Intermediation is Occurring...

肆
波

If you had a billion dollars – what would you do it? David Murdock, 83 year-old billionaire CEO of Dole Food Company and a life-long wellness guru, is investing in the “medi-spa” movement by creating upscale health and fitness centers in conjunction with the Four Seasons Hotel chain.

California WellBeing Institute

WellBeing Center – Learning to live better / longer takes time, motivation, support with specific skills and knowledge – to be provided by The WellBeing Center. It hosts workshops and LifeAdvisor consultations to support an individual’s journey toward renewed health...



The Clinic – Offers an onsite integrative health clinic (i.e. the California Health and Longevity Institute, Inc.) which offers the advanced preventive medicine and diagnostic testing in the comfort of nice surroundings...



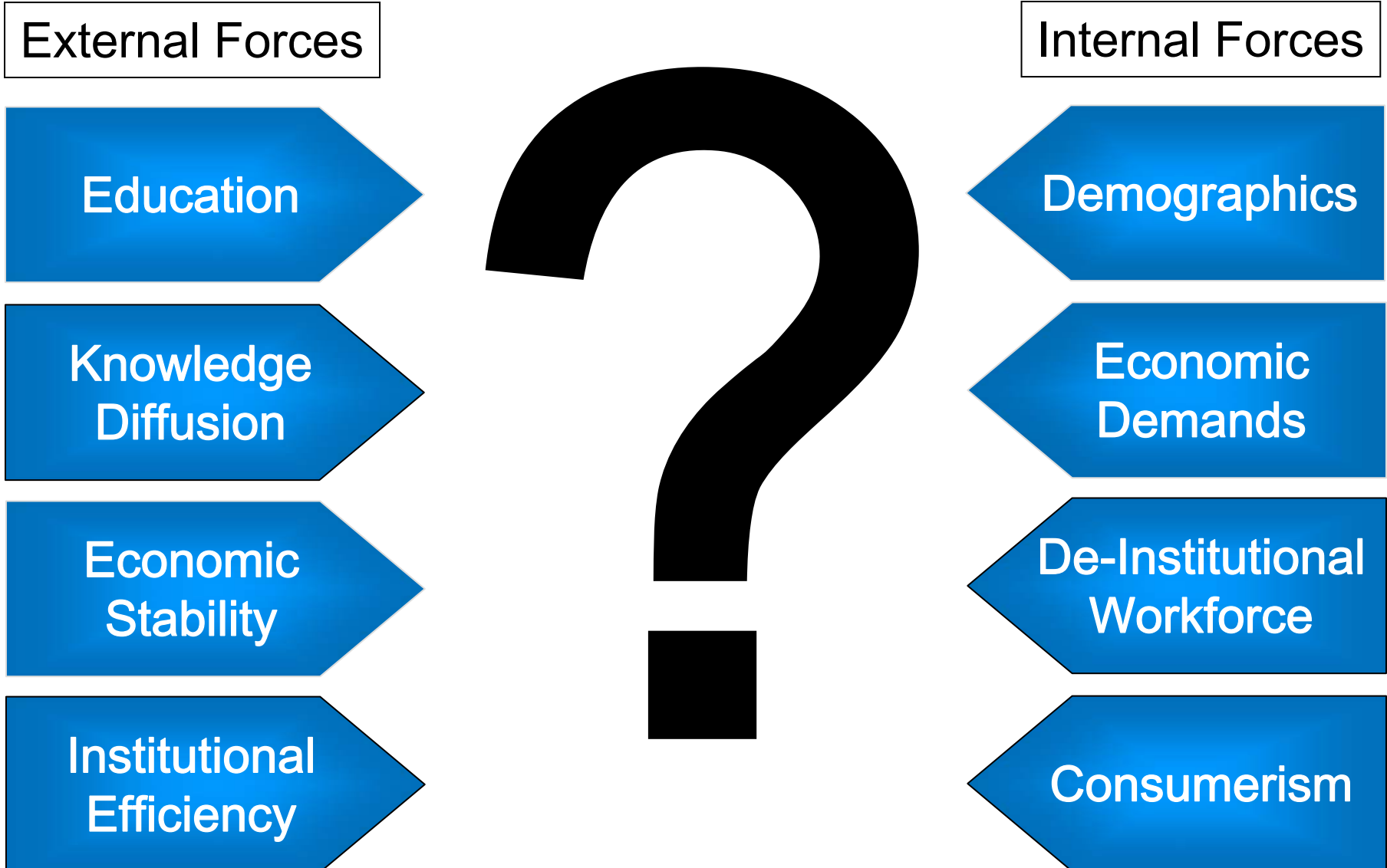
Fitness Center – A fully equipped Fitness Center, complete with a movement studio, Pilates training room, the latest fitness training equipment, daily fitness sessions and private trainers is available to all participants...



The Hotel – Includes 270 upscale rooms with gourmet level restaurants providing healthy eating options, and expansive indoor and outdoor function spaces to accommodate every need, whim and desire...



The Forces of Change...Creating a New World...



Education – An Insufficient Investment...

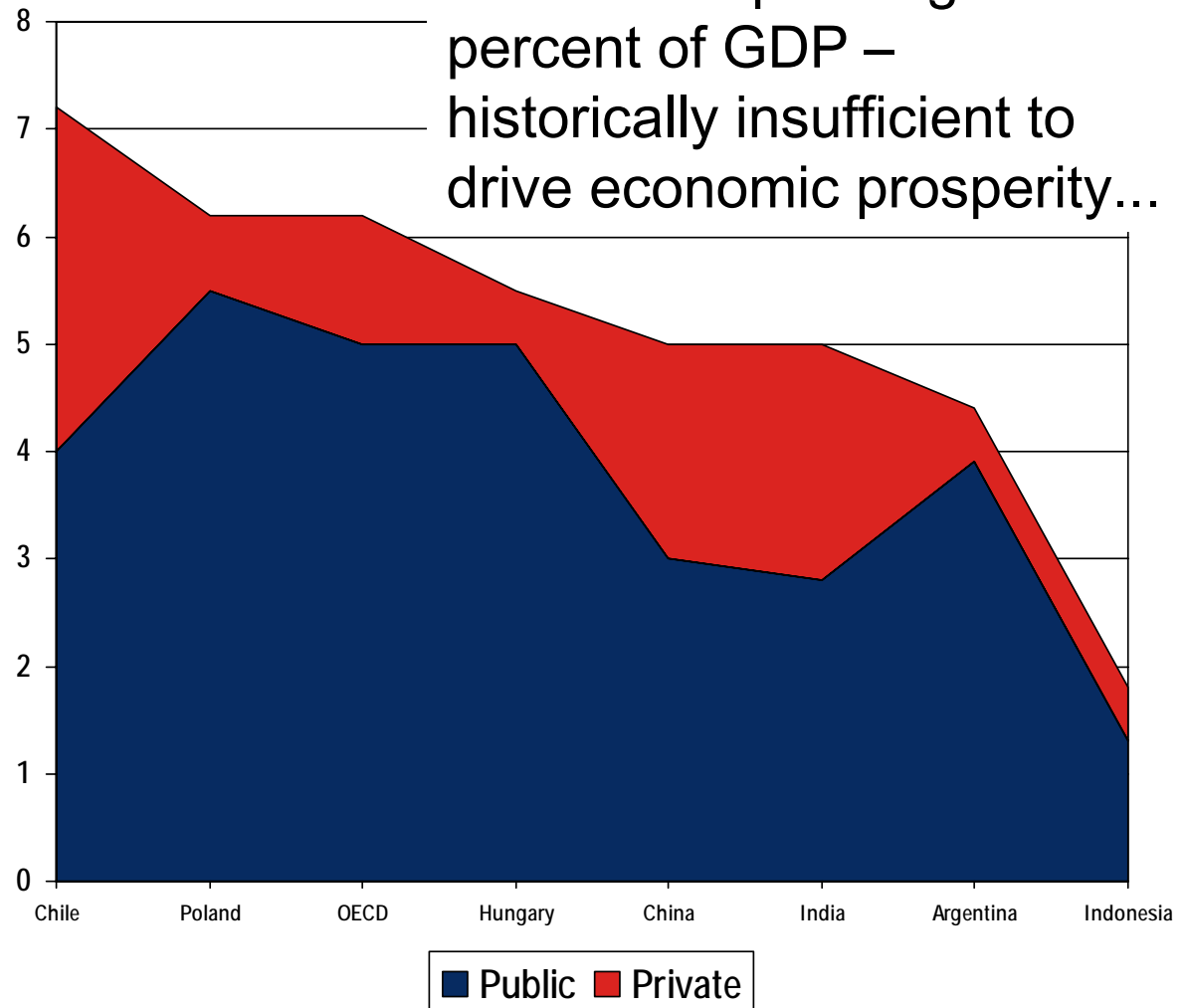
Education

“...the empires of the future will be empires of the mind.”

Winston Churchill
1934 Speech at
Harvard University



Education spending as a percent of GDP – historically insufficient to drive economic prosperity...



Source: Oxford Economic Forecasters: OECD

Education



- Investment in education is growing throughout the world...
 - China – with >16 million students, has overtaken the USA as the world's largest higher education system
 - Malaysia – same pattern, increasing higher education enrollment by 166% over the next 4 years from 600K to 1.6M
 - India – 23% of all higher ed enrollments use distance learning at 13 national / state universities and 106 institutions. By 2010, 40 percent of all higher education participation will take place using distance education
 - Eastern Europe – similar investments are occurring...
- Higher education participation will likely shift from @ 10% in developing countries to 50% = level of developed nations
- If developing nations 35% participation rate = 150 million additional students will be added – OR, far more than today's global total.

Source: Oxford Economic Forecasters: OECD

Knowledge Diffusion – Holds No Boundaries...

Education

Knowledge
Diffusion

- Types of workers (McKinsey Consulting, 2006)
 - Transformational (extract / convert raw materials)
 - Transactional (easily scripted or automated functions)
 - Tacit (complex interactions requiring high judgment)
- Knowledge workers are *internationalizing...*
 - Deployment of information technology allows knowledge workers to work anywhere
 - Innovation requires attracting the best and brightest
 - Reverse migration beginning to occur and, work will follow the knowledge worker
- Higher education is becoming commoditized along with research and development
 - India and China are projected to **double** the supply of higher education institutions over the next 10 years
 - Greater job opportunities for knowledge workers at home
- As work moves across borders, the cultural, ethnic, religious and linguistic diversity issues will increase for organizations like Kaiser

Source: The Economist, October 7, 2006 “A Survey of Talent”, p.4.

Education

Knowledge
Diffusion

USA

- **Ethnic culture**
 - “Individual” focused
 - “Save the world”
- **Source of Trust**
 - Trust the contract
 - Don’t get into hassles
 - Fulfill the agreement
- **Business culture**
 - Outspoken / eloquent
 - Communicate widely
- **Business communication**
 - Direct / Matter-of-fact
 - Business objective paramount
 - Immediate response strong

CHINA

- **Ethnic culture**
 - “Relationship” centered
 - “Mind your business”
- **Source of Trust**
 - Trust those around you
 - Don’t “lose face”
 - Live up to agreements
- **Business culture**
 - Group decisions
 - Boss has final say
- **Business communication**
 - Indirect / courteous
 - Long memory
 - Immediate response unlikely

Economic Stability – Two Case Studies...

Education

Knowledge
Diffusion

Economic
Stability

- The populations are somewhat different...
 - China's population is aging – 11% of the population over the age of 60; by 2040 = 28% will be over 60
 - India's is growing younger – the percent of the population over 60 will not reach 11% until 2025
- Literacy differs substantially...
 - 91% of Chinese can read and write well enough to meet UNESCO literacy standards
 - In India – only 60% of the population are literate using India's standards – which are much less stringent
- Communications infrastructure is inadequate...
 - China heavily censors the Net
 - India has put at least one public Internet connection in every village in the country, giving them free access to the world's flow of ideas
- Economy characteristics differ...
 - China = manufacturing (53% of GDP) – grew by 27.7% in 2005 alone!!
 - India = services (50% of GDP.) – economic output grew by 8.2% in 2005.



Institutional Efficiency – Changing Industries...

Education

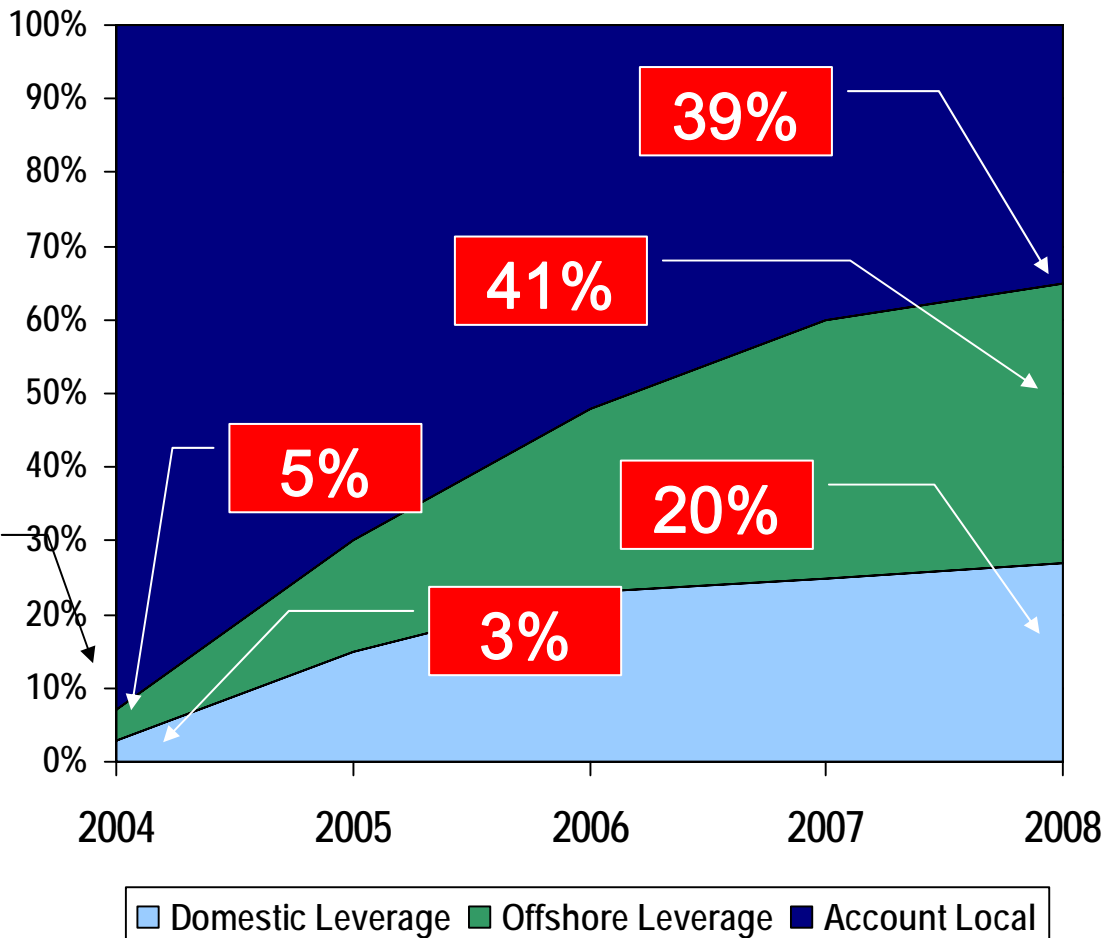
Knowledge
Diffusion

Economic
Stability

Institutional
Efficiency

92%

At Perot Systems - by year-end 2008, 65% of the work within a particular account will be leveraged outside of the account with an increasing off shore portion.



Institutional Efficiency – It's Professionals...

Education

The pace of off-shoring increases and, it's a lot more than just manufacturing... White-collar jobs are also projected to move offshore...

Knowledge Diffusion

Economic Stability

Institutional Efficiency

| | 2005 | 2010 | 2015 |
|------------------------|---------|---------|---------|
| Architecture | 32,000 | 83,000 | 184,000 |
| Business operations | 61,000 | 162,000 | 348,000 |
| Computer science | 109,000 | 277,000 | 473,000 |
| Law | 14,000 | 35,000 | 75,000 |
| Life sciences | 3,700 | 14,000 | 37,000 |
| Management | 37,000 | 18,000 | 288,000 |
| Healthcare Back Office | ????? | ????? | ????? |
| Healthcare Clinical | ????? | ????? | ????? |

Source: Forrester Research and Institute of Electrical and Electronics Engineers-USA.

Internal + External Force = Globalized Workforce

External Forces

Education

Knowledge
Diffusion

Economic
Stability

Institutional
Efficiency



Internal Forces

Demographics

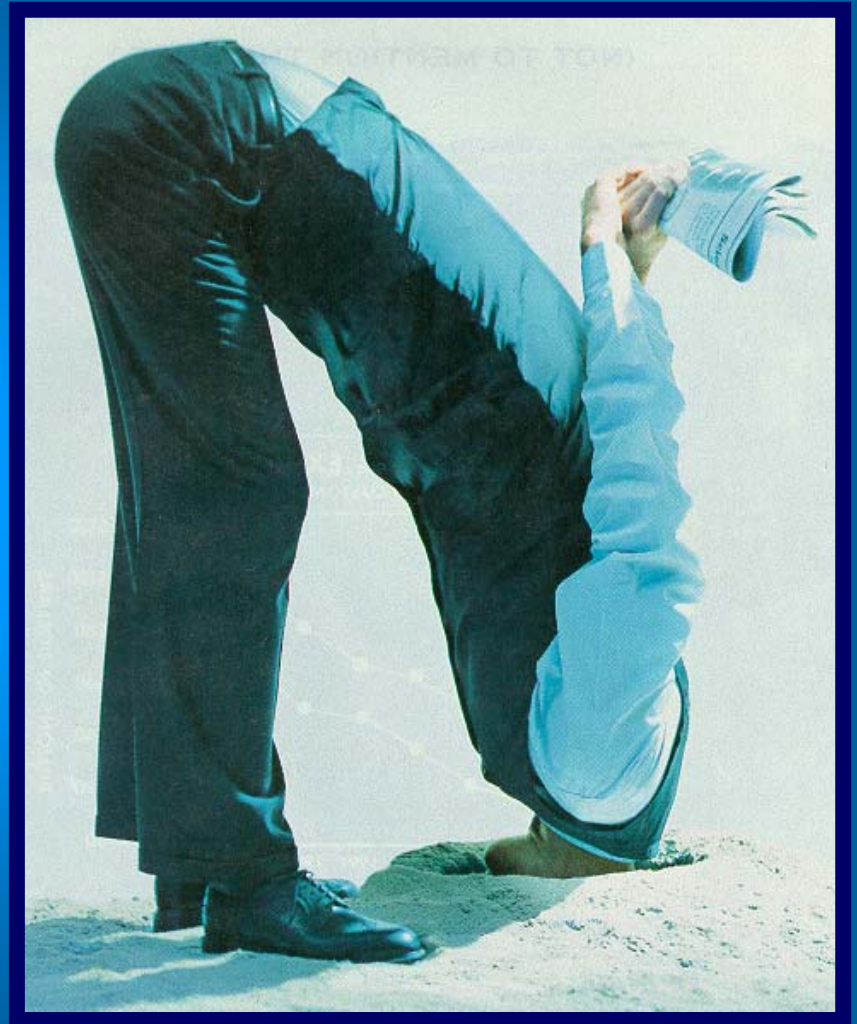
Economic
Demands

Consumerism

De-Institutional
Workforce

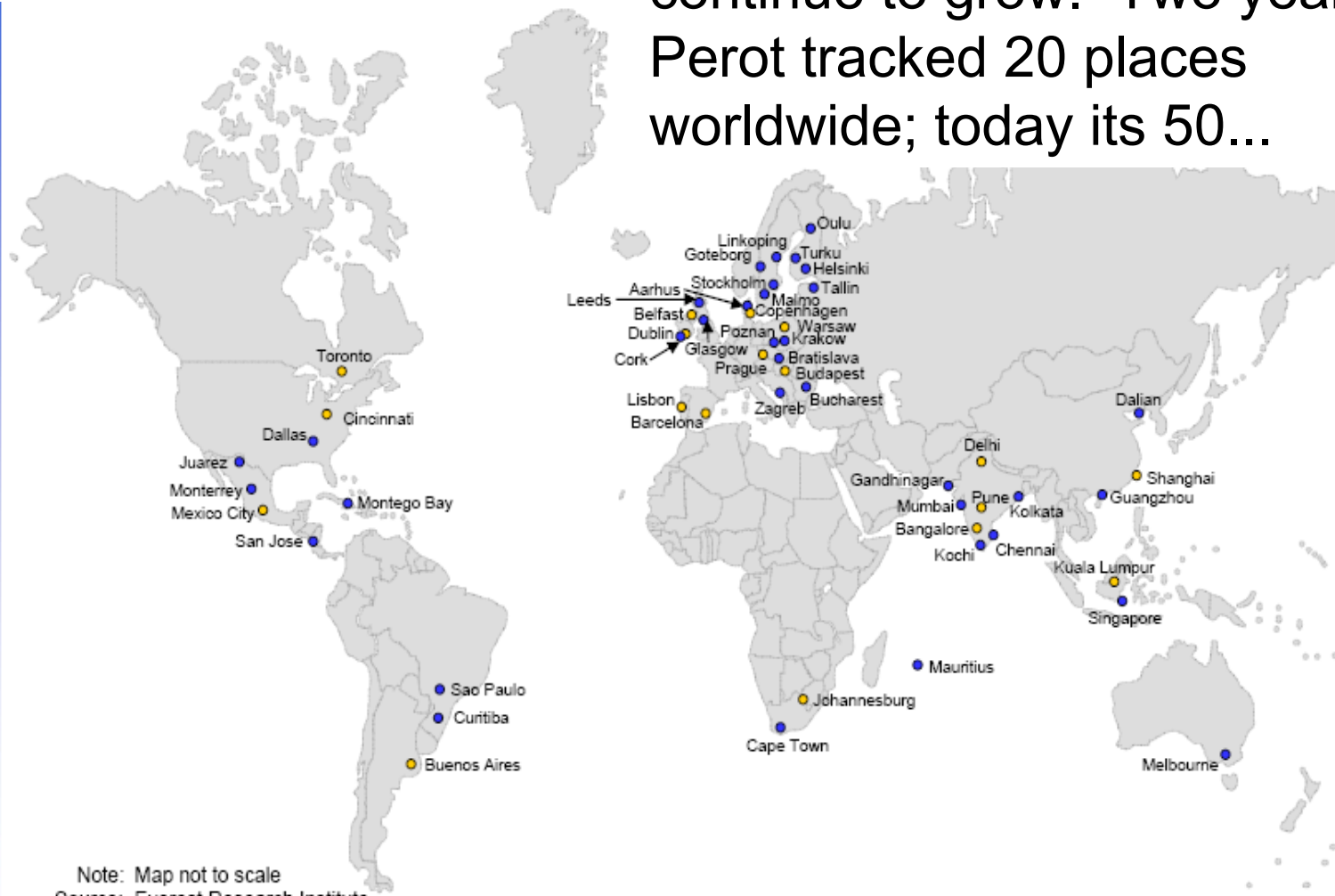
The New Questions for the New Millennium...

*But...we're in
health care –
and, it's
different!!
Right?*



So...What's the Real Story?

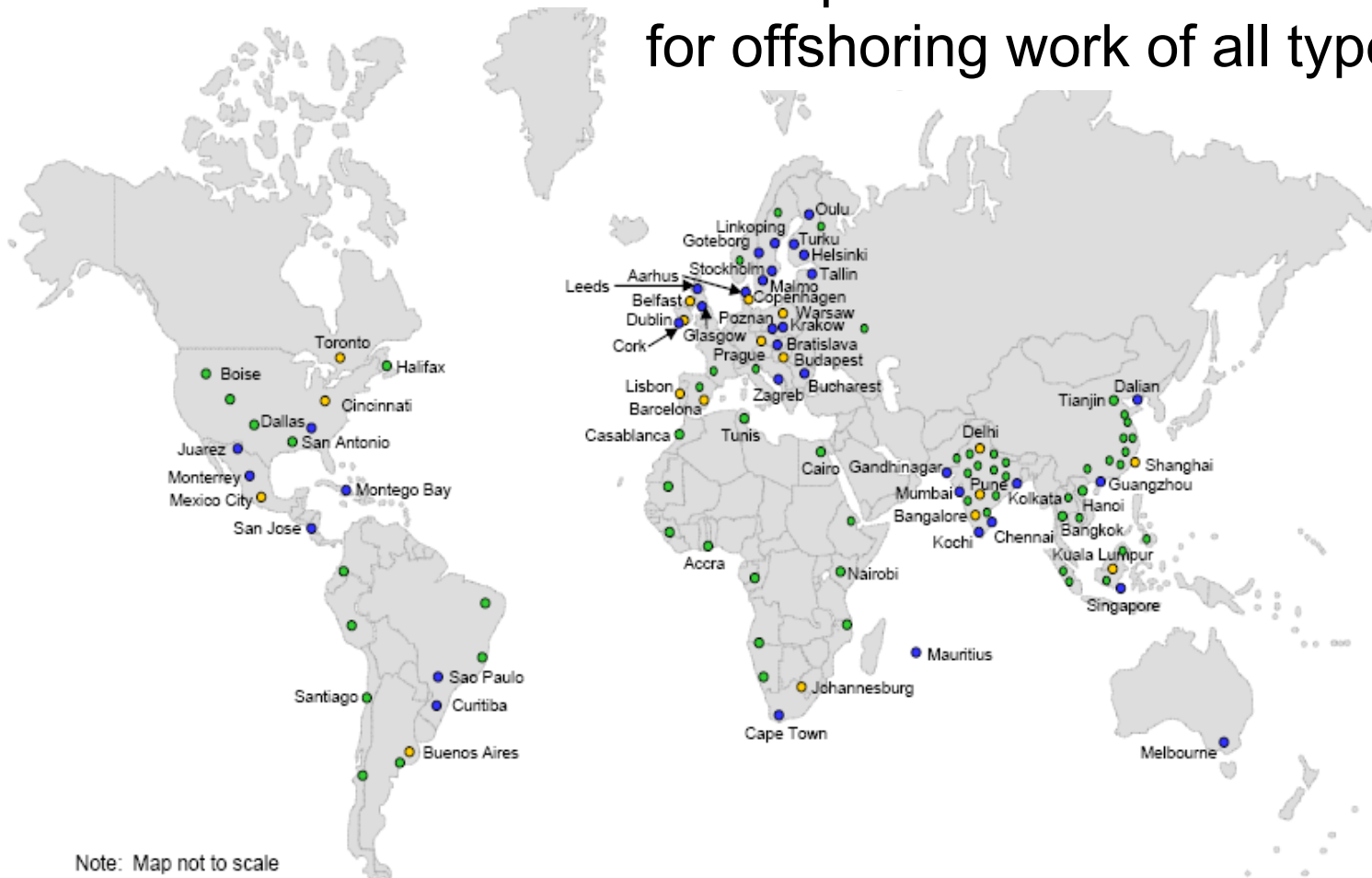
Active offshore service locations continue to grow. Two years ago Perot tracked 20 places worldwide; today its 50...



Note: Map not to scale
Source: Everest Research Institute

And...the Story is Changing Rapidly...

And, >100 locations are under development on a worldwide basis for offshoring work of all types...

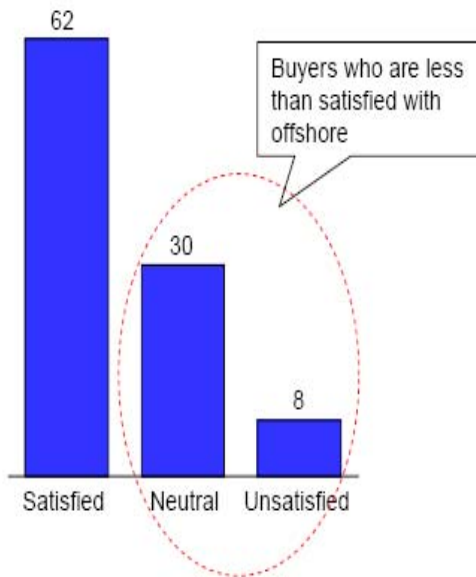


But, It's Not All A Bed of Roses

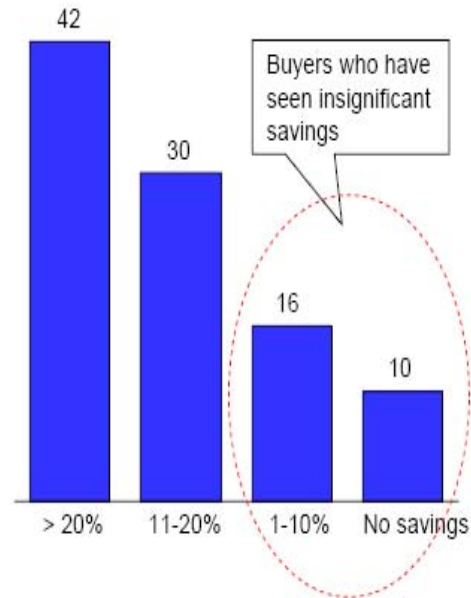
Although offshoring has enjoyed much success, a number of surveys reveal a significant percentage of current offshore users are not satisfied



Buyer satisfaction with offshoring¹
Percentage



Savings on average from offshoring²
Percentage



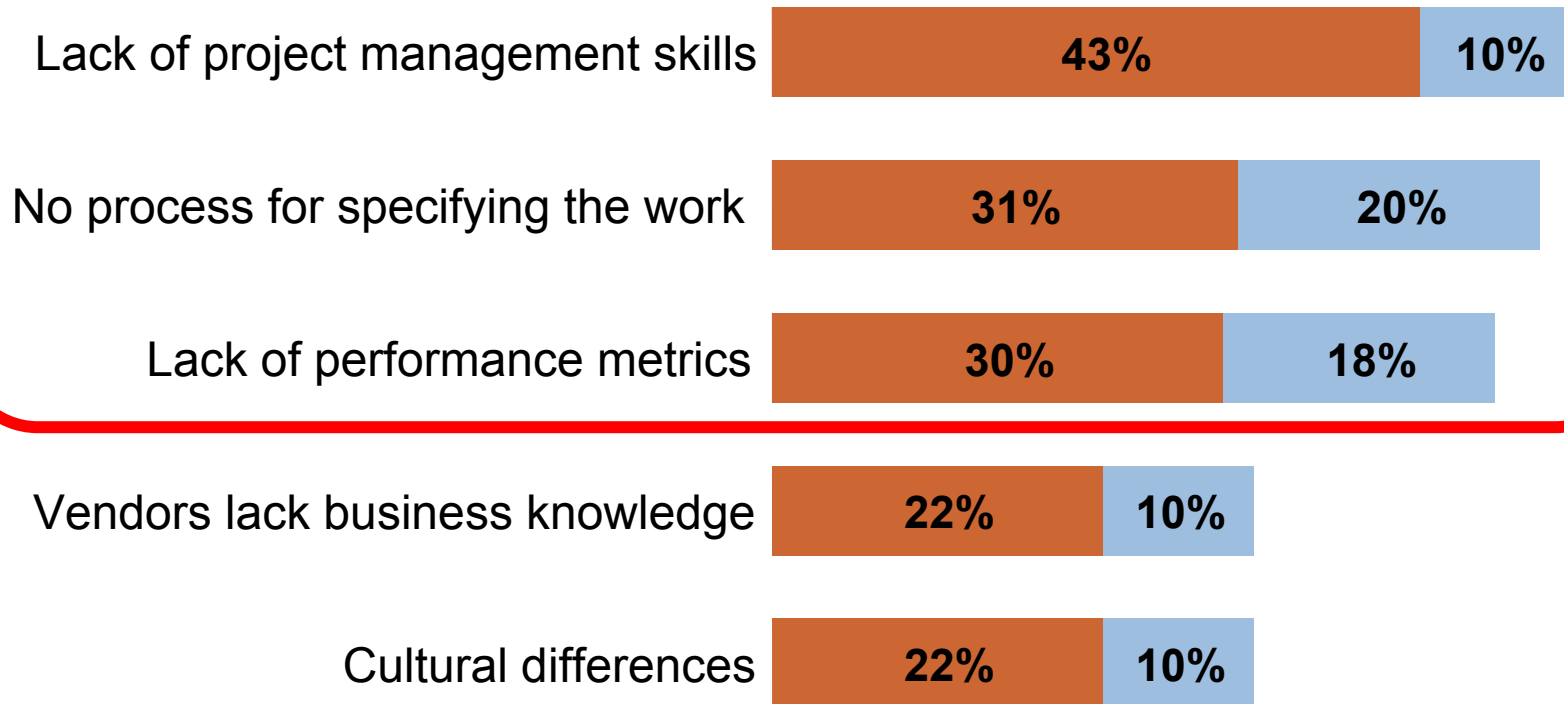
¹ DiamondCluster 2005 Global IT Outsourcing study

² CFO.com survey, June 2004



But, It's Not All A Bed of Roses

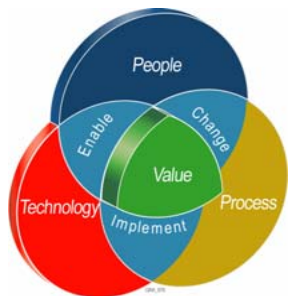
■ Minor challenge ■ Major challenge



103 North American IT and Business executives Jan 05

Source: Forrester

So...How Does This Apply to Clinical Medicine?



An effective approach to clinical transformation begins with an assessment of current processes and attention in the redesign of these processes on the effective use of best practices, performance measures and results, along with support from enabling technology.

Managing Patient Care Delivery

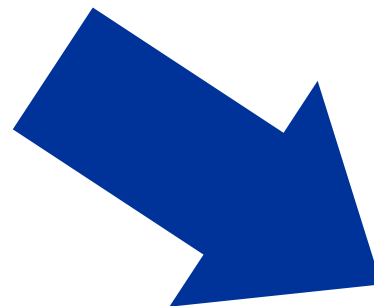
- *Patient ID and Tracking*
- *Order Management*
- *Medication Management*
- *Case Management*
- *Patient Monitoring*
- *Clinical Documentation*

Managing Tx/Dx Services

- *Orders and Results Reporting*
- *Departmental Workflow*
- *Clinical Resource Utilization*
- *Charge Capture*

Managing Patient Flow

- *Admit/Discharge/Transfer*
- *Bed Management*
- *Scheduling*



*Priorities
For
Process Design*

津波

1. Lack of Detail Planning...
2. Lack of Team Integration...
3. Cultural Disconnects Occur...
4. Lack of Organizational Structure...
5. Metrics Required...
6. Clear Documentation Essential...
7. Face-to-Face Must Occur (Quarterly)...
8. Telework Doesn't Always Work...
9. Communication Must Be Frequent...
10. It Takes Time to Learn Virtuality...Start Now...

*"Trends, like horses,
are easier to ride in
the direction in which
they are going"*

John Naisbett



So, Who's Doing What To Whom? And, Why?

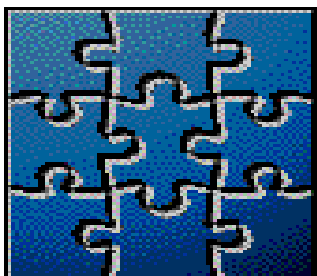
#1



Digitalization



De-Tethered Networks



Standardization



- When is a radiologist a radiologist?
- How is a cardiologist different than a radiologist?
- What's the value difference between a nurse practitioner and a family physician?
- If 85 – 90% of pediatric care is protocol driven, who should provide it?

And, How Are They Doing It?

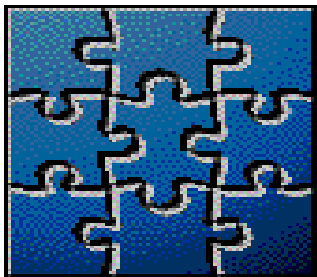
#2



Robotics



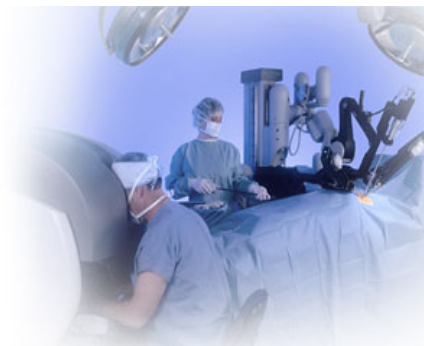
De-Tethered Networks



Standardization

Where's Your Physician ?

- Yulan Wang founded Computer Motion (www.computermotion.com) in 1989 as a robotics research lab funded by NASA.
- In 1994 developed the first FDA-approved surgical robot, a voice-controlled endoscopic camera, Aesop.



Bedford for NEWS

- January 19, 2002 – First USA coronary artery bypass procedure done on a robotic basis.
- 375,000 coronary heart bypass surgery procedures per year, the most common of USA open heart operations procedure. Use of the procedure will...
 - Reduce morbidity
 - Shorten recovery
 - Reduce resource consumption

And, As Importantly – Where Are They Doing It?

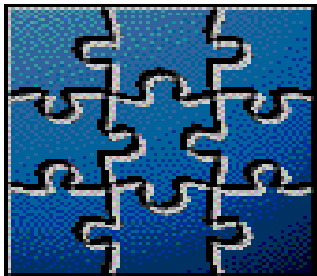
And, where can you go???



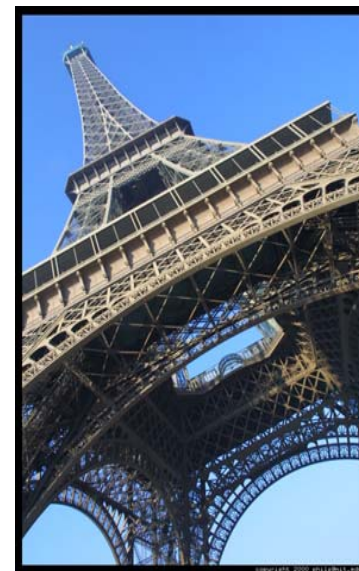
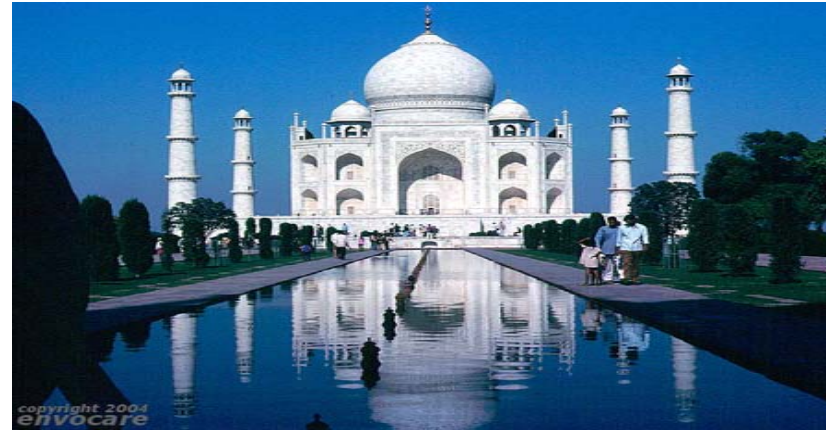
Digitalization



De-Tethered Networks



Standardization



And, Not To Be Forgotten – What Does It Cost?

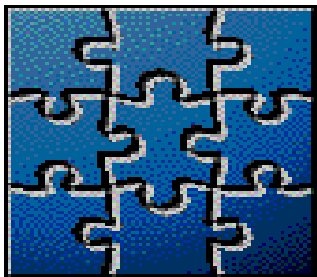
And, the cost difference...



Digitalization



De-Tethered Networks



Standardization

| | USA/Canada | India | France |
|-----------------|------------|----------|----------|
| CARDIAC | | | |
| Bypass | \$100,000 | \$7,000 | \$33,100 |
| Angiography | \$5,000 | \$950 | \$8,100 |
| ORTHO | | | |
| Hip replace | \$40,000 | \$5,800 | \$15,000 |
| Knee replace | \$35,000 | \$6,700 | \$17,000 |
| Rotator cuff | \$40,000 | \$3,700 | N/A |
| ACL repair | \$17,000 | \$3,700 | N/A |
| GASTRIC | | | |
| Bypass | \$30,000 | \$16,500 | N/A |
| Lap banding | \$30,000 | \$16,500 | N/A |
| COSMETIC | | | |
| Breast aug | \$5,000 | \$2,500 | \$9,600 |
| Breast reduc | \$4,500 | \$2,100 | \$10,000 |
| Facelift | \$8,500 | \$2,500 | \$12,500 |
| Nose job | \$4,200 | \$2,250 | \$7,000 |

Source: SF Chronicle May 7, 2006

#4

How Powerful Is The Knowledge Of The Network?



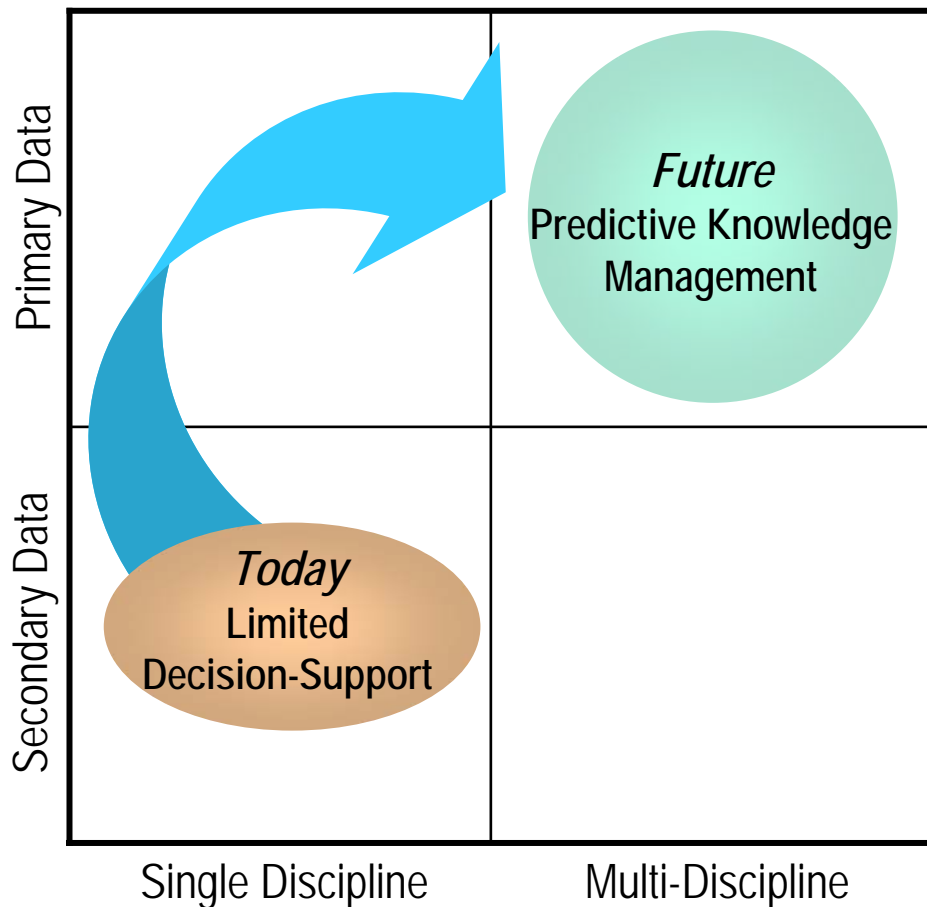
Peripheral Intelligence



De-Tethered Networks



Digitalization



- Granular
- Clinical
- Operational
- Financial
- Predictive
- Real-Time

- General
- Coded
- Interpretive
- Transactional
- Historical
- Batch

But, at the end of the day – *It's all about people...*

Digital Disruptions and Expectations...

- **Satisfaction**

- Service – where I want it, when I want it...
- Convenience – no hassles, no waits and no lines...
- Expectation – because I want it...

- **Outcomes** – The right care, in the right place, at the right time with the right results...

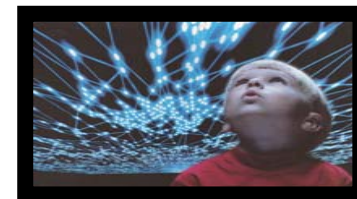
- Always the Best – no drips, no puns, no errors...
- Knowing Who's Best – always the best...

- **Value** – And, with the right resources at the right cost...

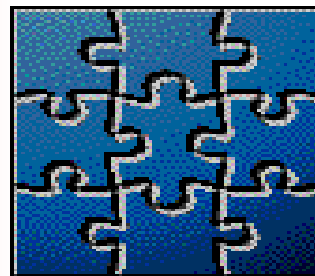
- Seamless...
- Customer customized...



De-Tethered Networks



Digitalization



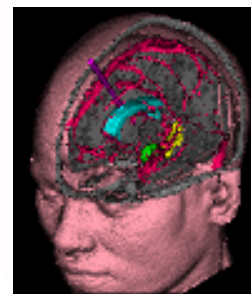
Standardization



Nanotization



Robotics



Non-Invasive
Modalities



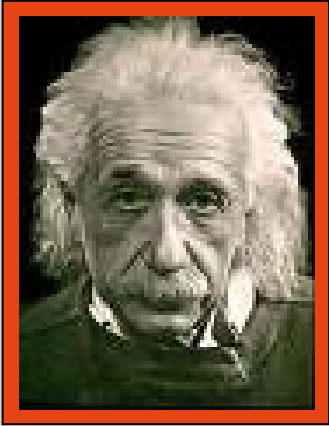
Peripheral
Intelligence



Biogenomics



The Transformation Imperative: Ten Underlying Premises...



“The significant problems of our day cannot be solved with the same knowledge used in creating them.”

Albert Einstein

1. Transparency will increase...
2. Demands for value will accelerate...
3. Costs must be managed more effectively...
4. Consumers will continue to empower themselves...
5. Innovation on all fronts will be derived through virtualization and partnering – not, control...
6. Unanticipated competitors will enter the market...
7. Healthcare is information intensive and digitalization absolutely changes the landscape...
8. Healthcare must become much more process savvy...
9. Healthcare must renew a focus on its core competencies...
10. Activities that *touch* the patient will remain as core competencies – and, at the bedside...



People | Processes | Technology | Results.

For further information contact:

Kevin Fickenscher, MD
Executive Vice President
Perot Systems Corporation
Plano, TX
972.577.7544 – Office
kevin.fickenscher@ps.net