

CEIBS HOSPITAL MANAGEMENT PROGRAM

SHANGHAI, CHINA

DECEMBER 13, 2008

**A FOREIGN EXPERT'S VIEW OF
HOW CHINA CAN GET MORE BENEFIT
FROM ITS INVESTMENT IN H.I.T.**

TODAY'S AGENDA

- ABOUT THE DORENFEST GROUP AND ITS CHINA BUSINESS APPROACH
- THE CURRENT STATUS OF I.T. USE IN CHINESE HOSPITALS
- LEARNING FROM THE H.I.T. EXPERIENCE OF OTHER COUNTRIES
- SOME SUGGESTIONS TO THE CLASS TO HELP YOU MAKE MORE PROGRESS IN H.I.T. USE
- DISCUSSION

THE DORENFEST GROUP

- HEALTHCARE CONSULTING AND INVESTMENT FOCUS
- OFFER HEALTHCARE IMPROVEMENT SERVICES TO SUPPORT A MORE POSITIVE WORLD FUTURE
- HELP HEALTHCARE ORGANIZATIONS TO IMPROVE HEALTHCARE SERVICES WHILE REDUCING COSTS BY IMPROVING WORK PROCESSES, MANAGEMENT SYSTEMS, SERVICES TO PATIENTS, AND QUALITY OF MEDICAL CARE
- IN 2006 THE DORENFEST GROUP FORMED THE DORENFEST CHINA HEALTHCARE GROUP, BASED IN SHANGHAI, TO BRING OUR SKILL, TECHNOLOGY, AND CAPITAL TO CHINA IN A TWO-PHASE PROGRAM
- WE ARE NOW OPERATING IN PHASE 1 OF THIS PROGRAM, OFFERING A VARIETY OF CONSULTING, TRAINING, AND EDUCATION SERVICES TO THE CHINA HEALTHCARE SYSTEM
- WE EXPECT TO ENTER PHASE 2 OF OUR ACTIVITIES IN CHINA IN LATE 2009 WHEN WE WILL BEGIN TO MAKE INVESTMENTS IN WELL-DEFINED, GOOD BUSINESS PROJECTS, IN PARTNERSHIP WITH CHINESE HEALTH BUREAUS AND HOSPITALS

DORENFEST ACTIVITIES IN OTHER COUNTRIES

- CONDUCT MARKET STUDIES AND CONSULTING ASSIGNMENTS ON USE OF INFORMATION TECHNOLOGY IN HEALTH CARE IN A NUMBER OF COUNTRIES
- CONDUCT WORLDWIDE STUDIES COMPARING THE STATE OF THE ART IN HEALTH CARE I.T.
- CONTINUOUSLY MONITOR AND UPDATE OUR UNDERSTANDING OF WORLDWIDE HEALTH CARE I.T. THROUGH A VARIETY OF ONGOING ACTIVITIES:
 - IN-PERSON AND TELEPHONE DISCUSSIONS WITH NUMEROUS HOSPITAL EXECUTIVES AND I.T. SUPPLIER PERSONNEL
 - REVIEW OF I.T. IN USE AT HOSPITALS THROUGHOUT THE WORLD
- WORLDWIDE EDUCATIONAL SERVICES

DORENFEST PRE-ENTRY INVESTIGATION OF HEALTHCARE IN CHINA

1. IN 2005 AND THE SPRING OF 2006, WE VISITED 17 CITIES IN CHINA
2. VISITED WITH HUNDREDS OF LEADERS IN THE HEALTHCARE INDUSTRY IN CHINA TO LEARN ABOUT HEALTHCARE REFORM IN CHINA – ITS PROGRESS, ITS PROBLEMS, AND ITS NEXT STEPS
3. VISITED WITH OVER 100 HOSPITALS TO GAIN AN UNDERSTANDING OF HOSPITAL OPERATIONS IN CHINA, THEIR CURRENT STATUS, AND OPPORTUNITIES FOR IMPROVEMENTS
4. VISITED WITH PROVINCIAL AND CITY HEALTH BUREAUS TO LEARN WHAT THEIR GOALS ARE FOR THEIR PROVINCIAL AND CITY HOSPITALS
5. VISITED PRIVATE HOSPITALS TO OBSERVE THE RESULTS OF HEALTHCARE REFORM PRIVATIZATION EFFORTS IN CHINA
6. VISITED WITH COMPANIES SELLING PRODUCTS AND SERVICES TO THE HEALTHCARE INDUSTRY IN CHINA AND WHAT THEY BELIEVE ARE APPROPRIATE NEXT STEPS FOR REFORMING THE CHINESE HEALTHCARE SYSTEM
7. EVALUATED A GROUP OF HOSPITAL MANAGEMENT AND OWNERSHIP OPPORTUNITIES THAT WERE PRESENTED TO THE DORENFEST GROUP TO BECOME MORE FAMILIAR WITH THE ALTERNATIVE WAYS TO PROCEED IN BUILDING A “MODEL HOSPITAL” IN CHINA
8. DEVELOPED A STRATEGY FOR BRINGING DORENFEST SKILL AND EXPERIENCE TO CHINA

SOME RECENT CLIENT EXAMPLES IN CHINA

- EXAMPLES OF HEALTH BUREAU CLIENTS
 - SHENZHEN
 - CHONGQING
- EXAMPLES OF HOSPITAL CLIENTS
 - SHANGHAI CHANGNING MATERNITY AND INFANT HEALTH INSTITUTE
 - PEKING UNIVERSITY MEDICAL COLLEGE #3 HOSPITAL
- EXAMPLES OF HELPING CLIENTS FROM OTHER LOCATIONS TO BRING THEIR SKILLS TO MAINLAND CHINA
 - HONG KONG HOSPITAL AUTHORITY
 - MICROSOFT

THE CURRENT STATUS OF I.T. USE IN CHINESE HOSPITALS

EVOLUTION OF H.I.T. IN CHINA

- CHINA BEGAN TO COMPUTERIZE ITS HOSPITALS IN THE EARLY 90'S.
- CHINA MADE SLOW PROGRESS WITH INITIAL FOCUS ON FINANCIAL SYSTEMS
- ABOUT 5 YEARS AGO CHINESE HOSPITALS BEGAN TO MOVE MORE AGGRESSIVELY TOWARD I.T. USE FOR CLINICAL SYSTEMS.
- ALONG THE WAY, MANY SOFTWARE SOLUTIONS WERE DEVELOPED WITH SEVERAL HUNDRED SMALL SOFTWARE COMPANIES EMERGING IN CHINA.
- IN 2005, CHINA SPENT LESS THAN 1% OF TOTAL HEALTHCARE COSTS ON I.T. OR ABOUT \$600 MILLION (USD)
- IN 2007, CHINA SPENT OVER \$1 BILLION (USD) ON H.I.T.
- WE PREDICT RAPID GROWTH WILL ACCELERATE OVER THE NEXT THREE YEARS WITH H.I.T. INVESTMENT IN CHINA RISING TO BETWEEN \$2 AND \$3 BILLION (USD) BY 2010

FACTORS CONTRIBUTING TO FUTURE SPENDING GROWTH IN CHINA H.I.T.

1. CHINA HOSPITAL WORK PROCESSES ARE REDUNDANT, EXPENSIVE AND ERROR PRONE WITH GREAT OPPORTUNITIES FOR IMPROVEMENT WITH APPROPRIATE USE OF I.T
2. CHINESE HOSPITAL LEADERS WOULD LIKE TO TAKE A BIG LEAP FORWARD IN IMPROVING WORK PROCESSES AND IN DIGITIZING CHINESE HOSPITALS
3. THE MINISTRY OF HEALTH (MOH) GUIDELINES FOR HEALTH I.T. DEVELOPMENT CALLS FOR ELECTRONIC MEDICAL RECORDS AND REGIONAL HEALTH NETWORKS TO BE IMPLEMENTED BETWEEN 2003 AND 2010 PROVIDING MUCH MOMENTUM FOR HOSPITALS AND HEALTH BUREAUS TO INVEST MORE IN I.T. NOW
4. THE SOON TO BE FINALIZED HEALTHCARE REFORM IN CHINA WILL BE FACILITATED BY BETTER USE OF I.T. IN CHINESE HOSPITALS

GENERAL FACTORS IMPEDING SUCCESS IN CHINA H.I.T.

- 1. CHINESE HOSPITALS HAVE NOT INVESTED A LOT OF RESOURCES IN I.T. SYSTEMS AND INFRASTRUCTURE TO GET TO THE PRESENT LEVEL OF ACCOMPLISHMENT. WHILE CHINA WOULD LIKE TO CONTINUE THIS LOW INVESTMENT APPROACH, ITS NEXT STEPS FORWARD WILL REQUIRE GREATER INVESTMENT**
- 2. THE POOR RESULTS ACCOMPLISHED FROM PAST INVESTMENTS IN I.T. ARE CAUSING HESITATION AMONG LEADERS OF CHINESE HOSPITALS TO MAKE FUTURE INVESTMENTS IN I.T.**
- 3. THERE IS CONCERN AMONG H.I.T. EXPERTS IN CHINA ABOUT THE READINESS OF H.I.T. SOFTWARE PRODUCTS, HARDWARE PLATFORMS, AND INTEGRATION TOOLS TO FACILITATE THE ACCOMPLISHMENT OF CHINA'S GOALS**
- 4. INEXPERIENCE IN THE BUYING OF H.I.T. SOFTWARE PRODUCTS HAS FOLLOWED A SIMILAR PATH TO OTHER COUNTRIES AROUND THE WORLD IN THEIR EARLY STAGES OF EVOLUTION AND HAS RESULTED IN POOR BUYING DECISIONS**

GENERAL FACTORS IMPEDING SUCCESS IN CHINA H.I.T. (CONTINUED)

5. LIKE OTHER COUNTRIES AROUND THE WORLD, IMPLEMENTATION OF NEW I.T. SYSTEMS IN CHINA HAS OFTEN ADDED WORK INSTEAD OF REDUCING WORK AND HAS CREATED UNNECESSARILY REDUNDANT WORK PROCESSES

6. THE IMPLEMENTATION SKILL AND CHANGE MANAGEMENT EXPERIENCE NEEDED FOR CHINA TO TAKE THE BIG LEAP FORWARD THAT IT WOULD LIKE TO TAKE IS NOT YET AVAILABLE AT THE LEVEL REQUIRED FOR CHINA TO ACCOMPLISH ITS GOALS

7. SOMETIMES, HOSPITAL LEADERSHIP NOT KNOWING WHAT IT DOES NOT KNOW, IS CONTINUING TO USE POOR BUYING AND IMPLEMENTATION APPROACHES BECAUSE THEY DO NOT KNOW BETTER WAYS ARE POSSIBLE AND THERE IS A STRONG MOMENTUM TO CONTINUE WITH THESE APPROACHES

THE COMPETITIVE ENVIRONMENT

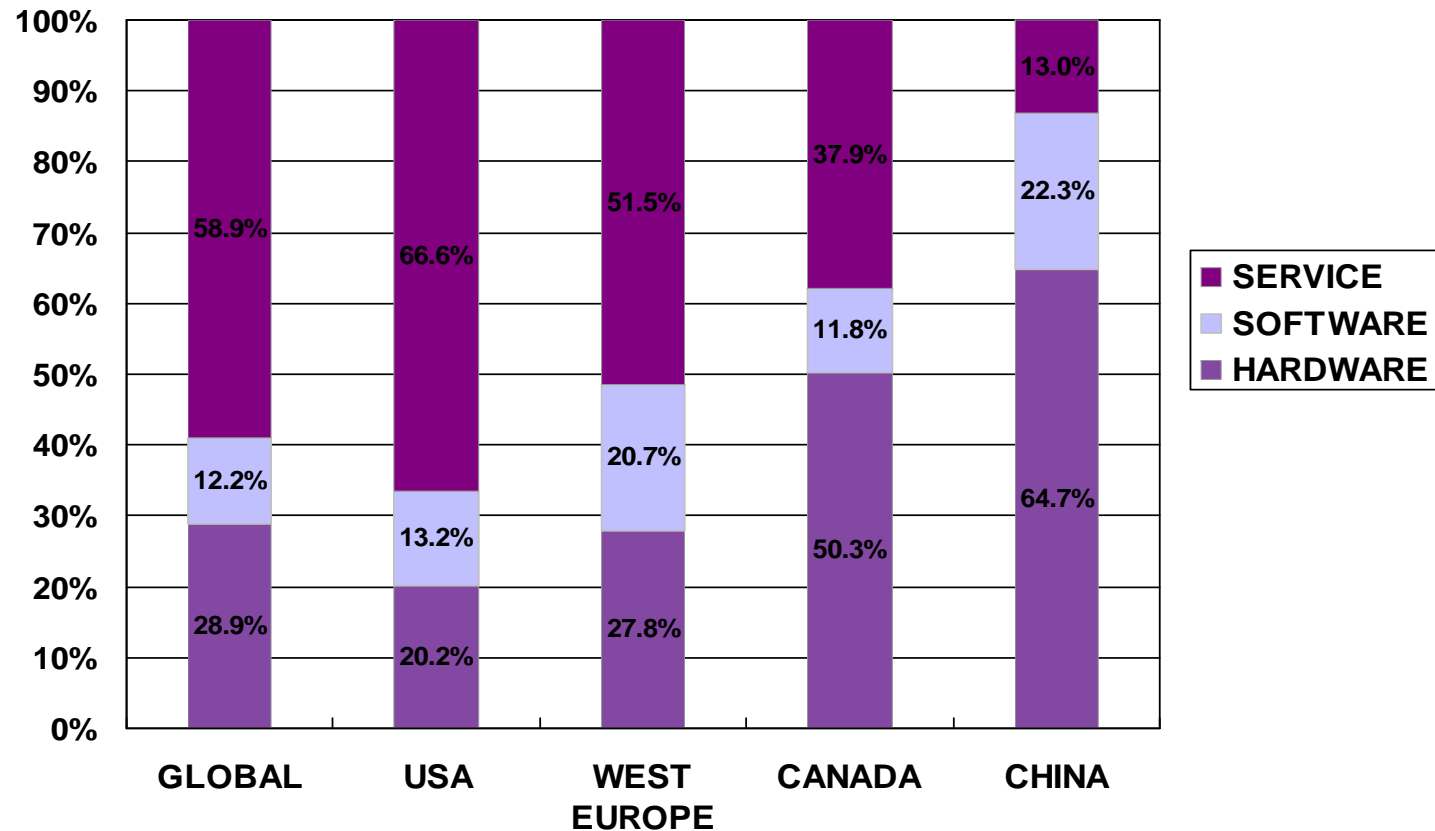
1. THERE ARE HUNDREDS OF SMALL SOFTWARE VENDORS ACTIVE IN THE CHINA H.I.T. MARKET
2. THE MARKET SEGMENTS WITH THE MOST VENDORS ARE EMR, H.I.S., PACS, RIS, AND LAB
3. ALL H.I.T. VENDORS IN THE MARKET STARTED IN A CITY AND MOST ARE STILL OPERATING IN THAT CITY OR A SMALL REGION AROUND THE CITY. SOME H.I.T. VENDORS ARE BEGINNING TO BECOME MORE NATIONAL IN SCOPE
4. MANY VENDORS IN THE HIS MARKET OFFER HEAVILY CUSTOMIZED SOLUTIONS RATHER THAN STANDARD SOLUTIONS. THESE CUSTOMIZED SOLUTIONS CREATE GREATER DEPENDENCY ON THE VENDOR AND ARE MORE DIFFICULT/EXPENSIVE TO KEEP CURRENT AS VENDORS PERIODICALLY RELEASE STANDARD VERSIONS/RELEASES
5. CHINESE HOSPITAL LEADERS WOULD LIKE TO SEE A NEW GENERATION OF H.I.T. SOFTWARE DEVELOPED FOR THE COUNTRY TO ASSIST IN HELPING THEM ACCOMPLISH THEIR “LEAPFROG” OBJECTIVES

EXPECTED EVOLUTION OF H.I.T. IMPLEMENTATION IN CHINA

1. IMPROVED BUYING AND IMPLEMENTATION OF I.T. SOFTWARE WITH MORE USER INVOLVEMENT
2. BETTER USE OF I.T. IN HOSPITAL MANAGEMENT
3. BETTER USE OF I.T. IN CLINICAL SERVICES
4. DIGITAL HOSPITALS WITH ELECTRONIC HEALTH RECORDS WILL EVOLVE WITH GREATER FREQUENCY
5. BETTER SYSTEMS INTEGRATION AND MORE STANDARDS TO SUPPORT I.T. PROGRESS AND THE USE OF MULTIPLE VENDORS IN THE I.T. ENVIRONMENT
6. REGIONAL HEALTH NETWORKS WILL EVOLVE
7. GREATER USE OF CONSULTANTS IN I.T. PLANNING AND IMPLEMENTATION

ALLOCATION OF H.I.T. INVESTMENT AROUND THE WORLD

2005 GLOBAL HIT INVESTMENT STRUCTURE



SOURCE: CCW Research

CHINA HEALTHCARE LEADERS WANT TO “LEAPFROG” THE WORLD

- CHINESE HOSPITALS AND HEALTH BUREAUS ARE CAREFULLY CONSIDERING HOW TO BE MORE SUCCESSFUL IN TAKING NEXT STEPS FORWARD IN I.T. USE
- THERE IS A RECOGNITION THAT FOR CHINA TO ACCOMPLISH ITS OBJECTIVES IN H.I.T. REQUIRES THE FOLLOWING :
 - LEARNING QUICKLY FROM THE GLOBAL EXPERIENCE
 - OVERCOMING RESISTANCE TO CHANGE
 - KNOWING HOW TO MANAGE CHANGE
 - DOING MORE OF WHAT THE REST OF THE WORLD DID RIGHT AND LESS OF WHAT THEY DID WRONG TO AVOID MISTAKES OTHER COUNTRIES HAVE MADE AND CHINA IS STILL MAKING
 - DEVELOPING MORE EXPERTISE IN THESE AREAS OF NEED

**LEARNING FROM THE H.I.T.
EXPERIENCE OF OTHER
COUNTRIES**

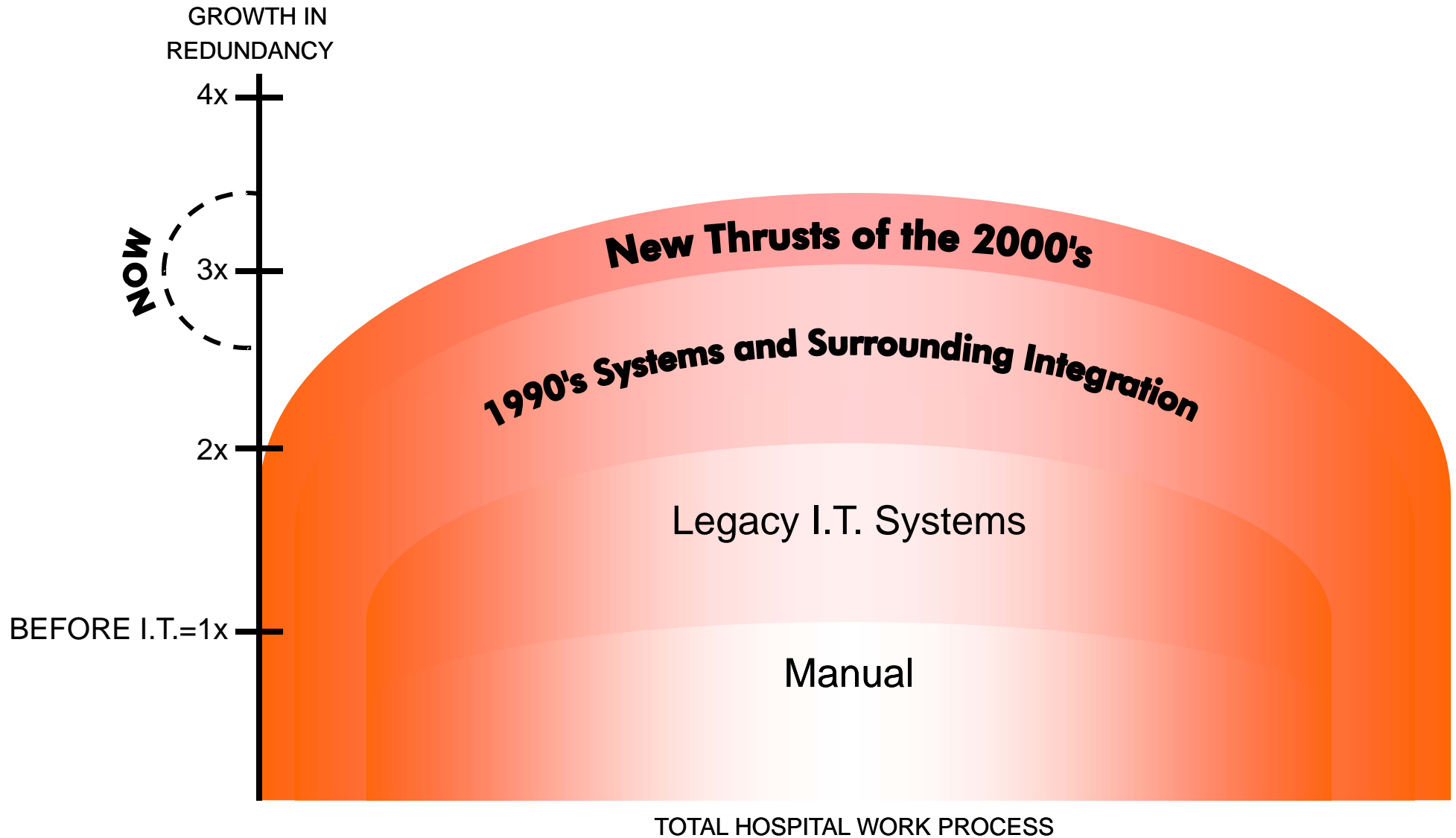
OPPORTUNITIES TO IMPROVE THE HEALTHCARE DELIVERY PROCESS HAVE BEEN PURSUED FOR MANY YEARS

- GREAT REDUNDANCY OF INFORMATION
- HIGH ERROR POTENTIAL
- LACK OF TIMELINESS
- HIGH COST
- ORGANIZATION COMPLEXITY

U.S. HOSPITALS STARTED USING H.I.T. IN THE 1960s AND SOUGHT AN EHR THROUGH FOUR GENERATIONS OF I.T. SYSTEMS

- FINANCE SYSTEMS
- LIMITED CLINICAL SYSTEMS
- MORE ADVANCED CLINICAL SYSTEMS
- ELECTRONIC HEALTH RECORDS

BUT POORLY IMPLEMENTED CHANGE LAYERED REDUNDANT WORK ON TOP OF ORIGINAL INEFFICIENCY



H.I.T. EVOLUTION IN THE REST OF THE WORLD

- CANADA STARTED IN THE LATE 1970s
- EUROPE AND AUSTRALIA BEGAN IN THE EARLY 1980s
- ASIA BEGAN IN THE 1990s
- CANADA, FRANCE, GERMANY, ENGLAND, AND AUSTRALIA ALL STARTED LATER THAN THE U.S., INVESTED LESS, AND HAVE MADE MORE PROGRESS
- HONG KONG STARTED EVEN LATER, INVESTED EVEN LESS, AND IS NOW AT THE STATE OF THE ART IN H.I.T.
- CHINA H.I.T. IS NOW AT AN EARLIER STAGE OF DEVELOPMENT. CHINA HAS THE GOALS AND DESIRE TO “LEAPFROG” THE REST OF THE WORLD IN H.I.T. USE IN THE NEXT FEW YEARS

SUMMARY

- U.S. SPENDS A MUCH LARGER SHARE OF GDP ON HEALTHCARE, BUT, THIS GREATER EXPENDITURE DOES NOT PRODUCE GREATER HEALTHCARE RESULTS
- U.S. SPENDS A LARGER SHARE OF ITS TOTAL HOSPITAL OPERATING COSTS ON I.T. EFFORTS
- U.S. HAS BEEN INVESTING HEAVILY IN H.I.T. FOR OVER 40 YEARS. WHILE THIS SUBSTANTIAL INVESTMENT HAS NOT PRODUCED ADEQUATE RETURN, THERE IS MUCH TO LEARN FROM WHAT WORKED AND DID NOT WORK IN U.S. H.I.T. STRATEGIES AND APPROACHES
- U.S. HAS BEEN THROUGH AT LEAST FOUR GENERATIONS OF HOSPITAL SOFTWARE PRODUCTS IN THE PAST FORTY YEARS
- THE REST OF THE WORLD STARTED AUTOMATION EFFORTS LATER, INVESTED LESS, AND HAVE RECEIVED A HIGHER RETURN ON H.I.T. INVESTMENT THAN THE U.S.
- THERE IS STILL MUCH TO DO TO IMPROVE H.I.T. ROI EVERYWHERE IN THE WORLD
- CHINA'S GOAL IS ACCOMPLISHABLE BY PAYING CAREFUL ATTENTION TO THE GLOBAL EXPERIENCE

**SOME SUGGESTIONS TO THE
CLASS TO HELP YOU MAKE MORE
PROGRESS IN H.I.T. USE**

COMMON THEMES EXPRESSED BY LEADERS IN CHINESE HOSPITALS

- “THE I.T. PROGRAM IS NOT WORKING AS WELL AS WE WOULD LIKE IT TO WORK”
- “OUR SOFTWARE SYSTEMS DO NOT TALK TO EACH OTHER”
- “WE HAVE A DESIRE TO SOLVE PROBLEMS THROUGH BETTER INTEGRATED AND MORE EXTENSIVE I.T. USE THROUGHOUT OUR CLINICAL AREAS”
- “WE WANT TO FIX UP THE CURRENT I.T. PROGRAM AND IMPLEMENT AN EHR IN OUR HOSPITAL”
- “WE SEE MORE AND BETTER I.T. USE AS IMPORTANT TO OUR FUTURE”
- “WE NEED A BETTER SOFTWARE VENDOR AND A BETTER SOFTWARE PRODUCT”

AREAS FOR HOSPITAL LEADERS TO FOCUS ON TO IMPROVE I.T. INVESTMENT RESULTS

1. CHANGING THE I.T. GOVERNANCE METHOD TO BE MORE EFFECTIVE
2. INCREASING THE INVOLVEMENT OF HOSPITAL CLINICIANS IN THE I.T. PROGRAM
3. REDUCING YOUR RELIANCE ON THE SOFTWARE VENDOR
4. CHANGING THE ROLE OF THE I.T. DEPARTMENT FROM DOING IT BY ITSELF TO INCLUDE FACILITATING, EDUCATING, AND TRAINING HOSPITAL MANAGEMENT AND USERS
5. TAKING ON MORE DIRECT RESPONSIBILITY FOR MANAGING THE CHANGE IN WORK PROCESSES AS NEW I.T. SYSTEMS ARE IMPLEMENTED

KEY STEPS TO IMPROVING LONG TERM I.T. INVESTMENT RESULTS IN CHINESE HOSPITALS

1. DEVELOP BETTER I.T. PLANNING AND PRIORITY SETTING METHODS
2. IMPROVE I.T. GOVERNANCE STRUCTURES
3. DEVELOP BETTER WAYS OF BUYING SOFTWARE TO INCREASE SUCCESS
 - ACCURATELY AND THOROUGHLY DEFINE USER NEEDS PRIOR TO BUYING SOFTWARE
 - USE BETTER METHODS OF ASSESSING SOFTWARE PRODUCT CAPABILITIES PRIOR TO PURCHASE
4. DEVELOP BETTER APPROACHES TO SYSTEM IMPLEMENTATION SO THAT IMPLEMENTATION OF NEW I.T. SYSTEMS WILL NOT ADD WORK AND CREATE UNNECESSARILY REDUNDANT WORK PROCESSES
5. DEVELOP BETTER APPROACHES TO INVOLVING AND TRAINING USERS AS PART OF THE BUYING AND IMPLEMENTATION PROCESSES

THANK YOU.

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