

A Collaborative Approach to Healthcare IT Innovations

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Agenda



1. What is Innovation and why do it?
2. What is CITIH?
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About your presenters...



- Phil Skinner, Deputy CIO, OSU Medical Center
 - Business Development
 - Administrative Director, CITIH
 - 28 years experience in healthcare IT
- Twyla Pohar, IT Director, James Cancer Hospital
 - Business Development
 - CITIH Event Planning
 - 10 years experience in healthcare IT (5 in R & D)

- Define innovation and why it is important
- Discuss why organizations should consider innovation
- Talk about the benefits for partnering with other academic or private healthcare entities to solve problems collaboratively
- Determine how a Center for IT Innovations in Health Care can facilitate advancements in technology

What /s Innovation?



- The introduction of something new
- A new idea, method or device
- Invention is *not* necessarily innovation
 - e.g. new products, services, or processes
- The use of an invention to either produce revenue or reduce costs
 - Provides tangible benefits

Why Innovate?



“One of the great things about working in the technology industry is you get to change the world, and innovation creates that change”

- Renee James, Corporate VP, Intel

“The pace of innovation is accelerating. While the barriers to restructuring delivery structures, reimbursement, and information are formidable, achieving only 50 percent of the goal will still leave all parties far better off...The opportunity for reform is far greater today, with health care in crisis, than a decade ago. Today, no one is defending the status quo.”

- Michael Porter, Director, Institute for Strategy and Competitiveness, Harvard

...But the current state of the economy!..Why?

“Sure, the economy's bad. But it's a good time to innovate. Breakthrough innovations come when the tension is greatest and the resources are most limited. That's when people are actually a lot more open to rethinking the fundamental way they do business.”

- Clay Christensen, Professor, Harvard Business School

Background



The OSU Medical Center has established a formal mechanism to seek opportunities for innovation in healthcare IT in a collaborative manner across the healthcare organizations and technology leaders.

While development of innovative healthcare IT solutions has progressed at a moderate pace, opportunities to innovate (on a large scale) are difficult to identify.

“Formal partnerships between industry and academic organizations would provide a greater opportunity to develop innovative, commercially viable technologies.”

*Katz and Martin *Res. Policy* **26** (1997)

Do You Have an Innovation Program at Your Institution?



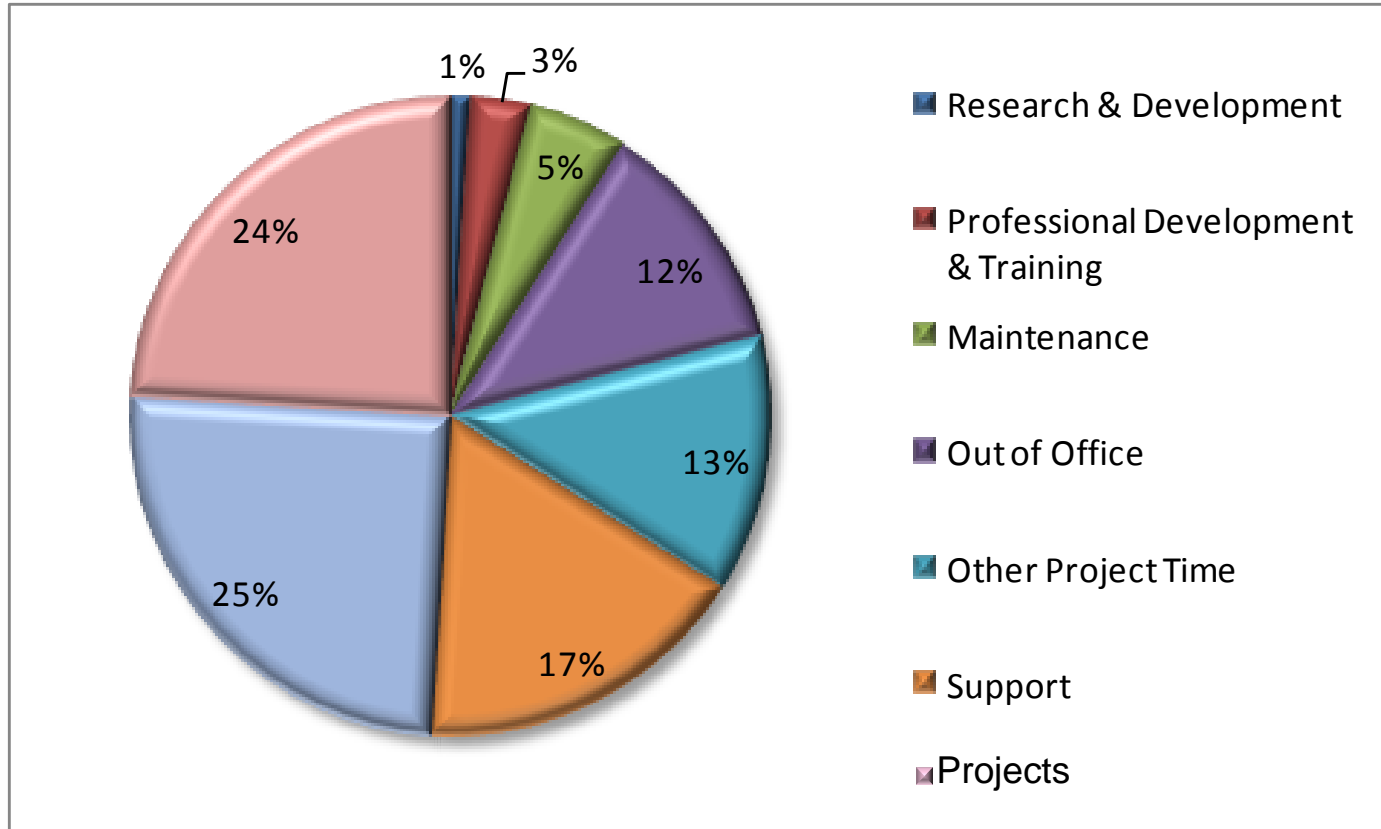
Yes

No

If Yes, How Much Time Does Your Organization Spend on Innovation?

- > 5%
- > 1% < 5%
- < 1%
- Don't know

Resource Utilization – OSUMC IT



What is CITIH?



The Center for IT Innovations in Healthcare at the OSU Medical Center is a research and development center.

CITIH supports innovative IT collaboration programs involving OSU Medical Center, industry partners and other large academic medical centers to act as a gateway for technology developers and manufacturers to create or field-test new concepts, products and applications in real-world healthcare environments.

www.medicalcenter.osu.edu/citih



“The ability of OSUMC to achieve its mission of improving people’s lives through innovation lies with individuals, such as academic and industry thought leaders, who recognize the importance of dedicating their efforts toward sharing their knowledge and experiences in the spirit of collaboration.”

- **Detlev H. (Herb) Smaltz, Ph.D., FACHE, FHIMSS**
CIO, OSU Medical Center
Executive Director, CITIH

What does CITIH do?



- ✓ Helps partners and collaborators develop, test, demonstrate, and document the efficacy of IT innovations leading to improvements in healthcare outcomes.
- ✓ Provides a technology test bed that develops comprehensive and objective evaluations of products and applications leading to the publication of white papers, journal articles and other public reviews
- ✓ Organize a consortium of collaborators to jointly develop funded research projects on IT innovations in health care
- ✓ Host annual healthcare IT symposia and other education opportunities addressing critical issues in healthcare delivery and management

Problem Statement

Health Care

Perspective



- Innovation is needed to keep up with the growing demands of the healthcare field
- Increasing pressure to produce innovative technologies and research output
- Finding time to work on innovative ideas (e.g. innovation tends to fall low on the priority list)
- Shrinking or stagnant budgets due to economic climate, which causes constraints on external and internal funding sources
- Risk associated with taking on new technology ventures

Problem Statement

Industry Perspective



- IT companies struggle with having enough resources (time and financial) to gain a greater understanding of the needs of their customers
- Customer-facing personnel (sales and marketing) may not have the ability to properly leverage information on market trends to the appropriate groups (R&D)
- Dedication of resources and large sums to R&D efforts – Companies have become increasingly aware that in-house R&D facilities and resources do not provide sufficient information for next generation technologies
- Historically, companies develop products in isolated testing environments that will, hopefully, come to market

Potential Organizational Benefits

- **Knowledge transfer** – exchange of technological information and intellectual capital
- **Learning vehicle** – opportunities to obtain new capability/skills and broaden potential scope of activities
- **Cost and risk sharing** between partners, thereby diminishing level of investment
- **Cost savings** for healthcare partners, obtaining significant discounts on new technology acquisition through scale economies
- **Formal networking** through industry collaborators to keep updated with industry trends, needs and cross-fertilization of ideas

Potential Industry Benefits



- Establishment of **technology test beds** across large AMCs and other healthcare organizations
- **Pool of resources** poised to provide organizational readiness (infrastructure, resources, culture, etc) that has the greatest potential to deliver successful results.
- **Collection of healthcare organizations** with common problem that needs to be solved and approach vendors for solution (reversing traditional model of technology innovation)
- **Opportunities for small companies** to have a place to vet ideas on products and services.

Academic/Industry Interaction

Model	Vision	Strategy	Management	Relationship
Classic	Industry acquires developed technology	Technology push	Academia	Academia defines research lines
Market	Market needs guide research	Market pull	Academia gets feedback from industry	Planned program was established knowing market requirements
Partnership	Strategic	Balance Between industry and market needs	Both partners	Symbiotic

* Viana Cunha and Fracasso J. *Knowl. Manage.* 3 (1999) (1), p. 66

Proposed Process

Where do opportunities exist?

- Process Evaluation
- Problem Definition

Is the problem large-scale?

- Determine whether other institutions have this problem
- Whom can we partner with?

How do we execute the right technology venture?

- Finding the best solution
- Measurable value

What companies can help solve this problem?

- Identifying viable partners
- Symbiosis

How do we maximize knowledge transfer/collaboration opportunities?

- Knowledge dissemination
- Effecting real change through technology



■ University Health System Consortium

- The mission of UHC is to advance knowledge, foster collaboration, and promote change to help members succeed in their respective markets. UHC's vision is to be a catalyst for change, accelerating the achievement of clinical and operational excellence.

■ Health systems, hospitals, and clinics

■ Professional associations

The perspective of OSU Medical Center:

Our Innovation Center is focused on establishing collaborations with both healthcare institutions and technology corporations to improve patient lives. We need the help and expertise of others who also recognize the strategic value of collaboration and also have similar objectives to explore new technologies.

Provide exposure into the capabilities of partner organizations, thereby increasing the probability of successfully developed innovative ideas.

■ Sample of Current Industry Participants:



Industry considers decisive factors in selecting academic partners:

Factor	Number (%)
Technical and scientific expertise	80
Leading edge work or appropriate technology	78
Demonstrated capability	70
Past track record	65
Infrastructure	60
Management of the organization	57
Review mechanism	50
Capability of industry	45
Financing	40
Business fit	25

* Mohan and Rao J.Sci Ind Res 60 (2001) p929

While only a portion of resource allocation is dedicated to innovation, CITIH at OSU Medical Center has attained success in the following initiatives:

- ✓ Video on Demand
- ✓ RFID
- ✓ Data Warehousing
- ✓ Patient Care Unit of the Future

Proposal: Create Interactive Educational System for Patients and Staff

- Partnership with AT&T
- Philanthropic gift provides opportunities for innovation
- Collaboratively demonstrate value of the Medical Grade Network project as a technology enabler
- Create system which other organizations can mimic to provide similar services
- Engage in partnership among a group of complementary vendors

Proposal: Identify opportunities to implement Radio Frequency Identification that will deliver measurable value to a large healthcare organization

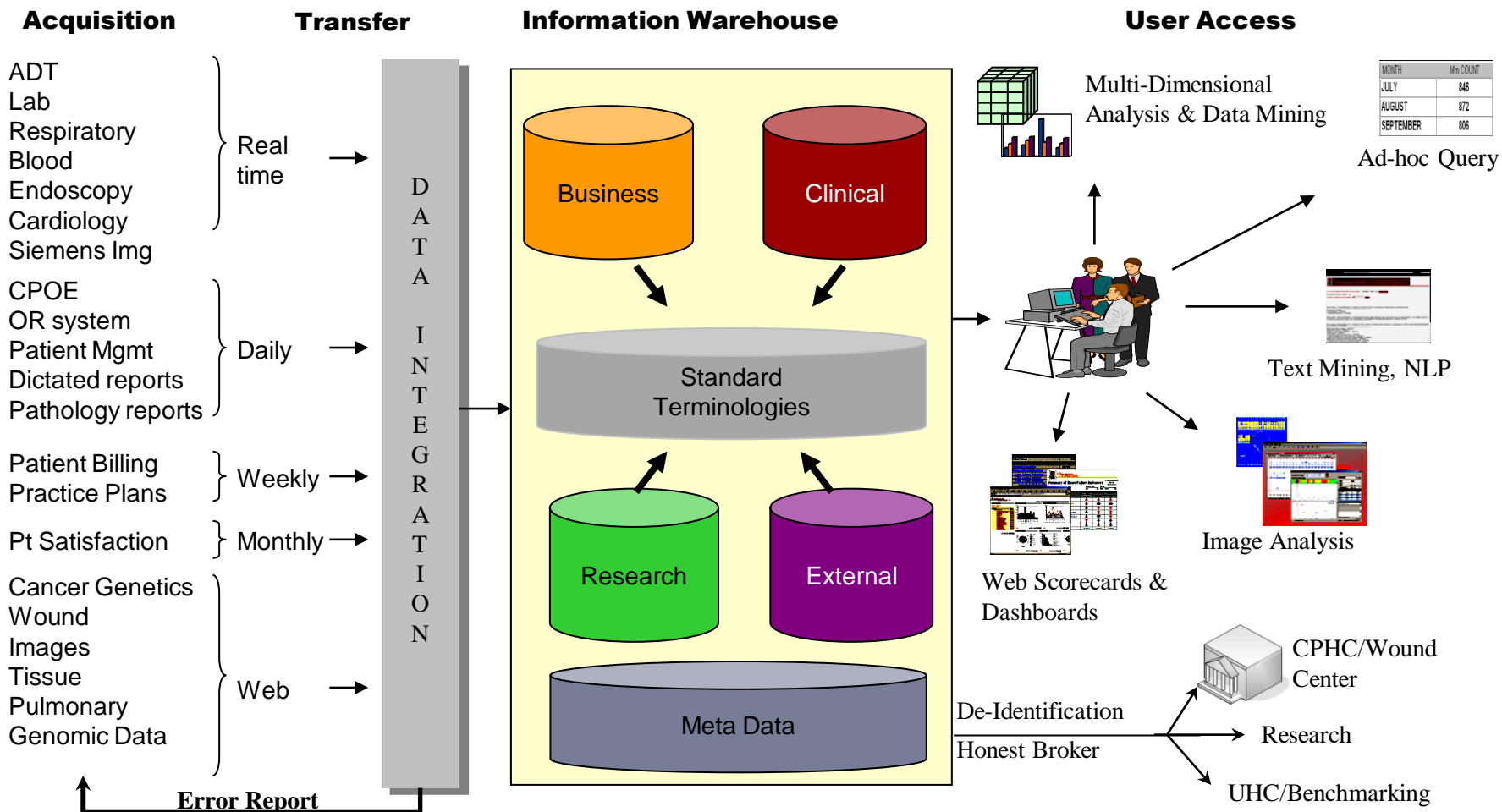
- Partnership with Cisco, Aeroscout and NeTeam
- Gifts in-kind provide resources to engage in innovative activities
- Leveraging the Medical Grade Network (MGN) as a platform for innovation
- Collaborative effort to identify and implement multiple RFID pilots
- Proof of concept – RFID over MGN as a viable enterprise solution for location based services.

Data Warehousing

Proposal: Deliver all types of data in a readily-consumable manner that delivers business value



- Partnership with Oracle
- Leverage the Information Warehouse



Proposal: Formally Designate Pilot Sites Across Institution Ideally Suited for Innovative Solutions

- Partnership across functional areas within the institution (clinical, pharmacy, research)
- Identified the individuals in the organization who are willing to champion innovative ideas
- Championed at leadership level for organizational buy-in

OSUMC CITIH Successes

Raising Awareness



- Quarterly Teleconferences with Partners

- Industry-sponsored national events to showcase successes:
 - November 2007: Advances in Healthcare IT Innovations
 - June 2008: Advances in Healthcare Data Analytics
 - November 2008: Consumerism and Healthcare IT Innovations

- Publication of whitepapers (*in progress*)

Success Factors for Partnership



- Clear alignment of responsibilities
- Ongoing Communication
- Trust
- Focus on quality
- Clearly Defined Technology selection process
- Established review process

Barriers to Success

“Two worlds of R & D”



*The goal of business and universities in producing and protecting intellectual property is **innovation** for the production of revenue. Beyond this ultimate **shared goal**, the interests of universities and businesses diverge. Universities value **intellectual property** not only as a revenue-producing resource, but also as a tool in the advancement and dissemination of knowledge. These divergent interests can result in **conflicts**....*

Hall, BH Boston/Dordrecht: Kluwer Academic Publishers 1999

Barriers to Success

Healthcare Perspective



- Challenges with Intellectual Property
- Lack of understanding of industry's business model
- Adaptation to new conditions, which may feel threatening
- Many universities want to publish results prior to IP protection and sometimes will not grant exclusivity of results
- Time constraints for staff to work on innovation and R & D.
- Need to provide resources and funding
- Willingness to make time to do research and write papers
- Diligence in metrics selection and follow through that quantify project success (ROI, cost benefit analysis, etc)

Barriers to Success

Industry perspective



- Want to capture all Intellectual Property (IP)
- Some companies believe they own IP developed under sponsored research
- IP and university licensing offices can provide insurmountable barrier to partnership
- Primary driver is often financial benefit
- May only enter into agreement if they feel a sale is imminent
- Desire to exclude competitors from partnership

Recommendations



- Gain understanding on other healthcare organizations with similar technology problems to avoid re-inventing the wheel
- Healthcare organizations need to carve out time for innovation (e.g. % of time exclusively allotted for R & D efforts)
- Set aside funding for innovation (through established process)
- Innovation efforts need to be focused and driven by leadership
- Identify industry partners and whom it makes sense to work with on specific initiatives
- Involvement of Development, Legal and Technology Licensing upfront
- Establishment of a formal partnership agreement

- Innovation is important and has tremendous impact on the advancement of healthcare IT
- Great opportunities reside in collaborative partnerships, most especially in order to avoid reinventing the wheel and incurring unnecessary costs
- A collaborative partnership between industry and health care institutions is beneficial, keeping in mind the factors critical for success

“Nothing Ventured, Nothing Gained”



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