Innovation Services

Solutions Navigator™ Workshops for Healthcare



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Background

The Solutions Navigator started as a market research tool supporting Six Sigma “voice of the customer” studies for new products and service development. After using the tool during on-site assessments, clients would invariably ask three key questions:

- What did my colleagues say?
- How does my organization compare to others?
- Now that you know my problems, can you help me solve them?

Response to these client needs lead to the further refinement of the tool for planning and solution design.

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JOHNSON CONTROLS SOLUTIONS NAVIGATOR™ FOR HEALTHCARE



548 Healthcare Organizations



94 Healthcare Workshops



1,306 Healthcare Participants

Solutions Navigator™ Planning Tool

Innovation Services help you quickly develop strategic plans and business solutions that maximize stakeholder engagement and return on involvement.



- **Research-based planning methodology with a user-friendly, 'game-board' interface**
- **Comprehensive set of organizational needs and best practices**
- **Robust report output, including benchmarking of results across departments or against similar organizations**
- **Interactive workshop format with broad stakeholder participation and input**

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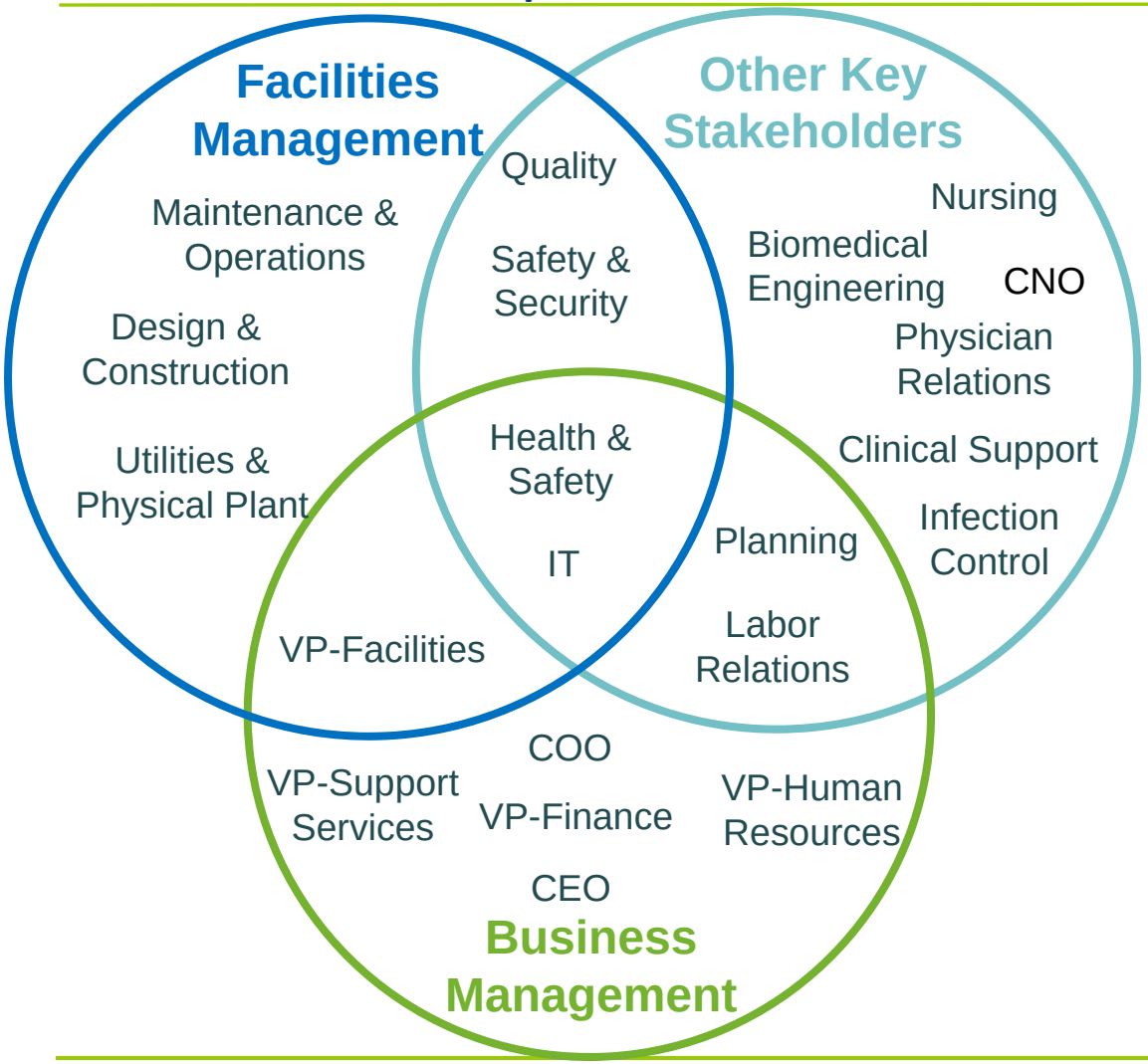
Benefits of the Solutions Navigator™

- Platform for structured, targeted meetings/discussions
- Quickly identify challenges & areas of focus
- Obtain input, ideas and support from key stakeholders
- Build alignment, consensus & understanding of key issues and priorities
- Discover where viewpoints align
- Understand differences in attitudes and perceptions
- Identify priorities
- Identify the greatest opportunities for improvement
- Discuss/determine where to go from here; how to implement change
- Educate stakeholders on current best practices
- Compare performance with other organizations
- Establishing a basis for measuring and tracking performance
- Creating excitement and enthusiasm within the organization

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Healthcare Navigation Sessions

Cross-Functional Participation





The tool works best with a cross-functional array of participants

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HEALTHCARE TECHNOLOGY NAVIGATOR™



Healthcare Technology Navigator Session

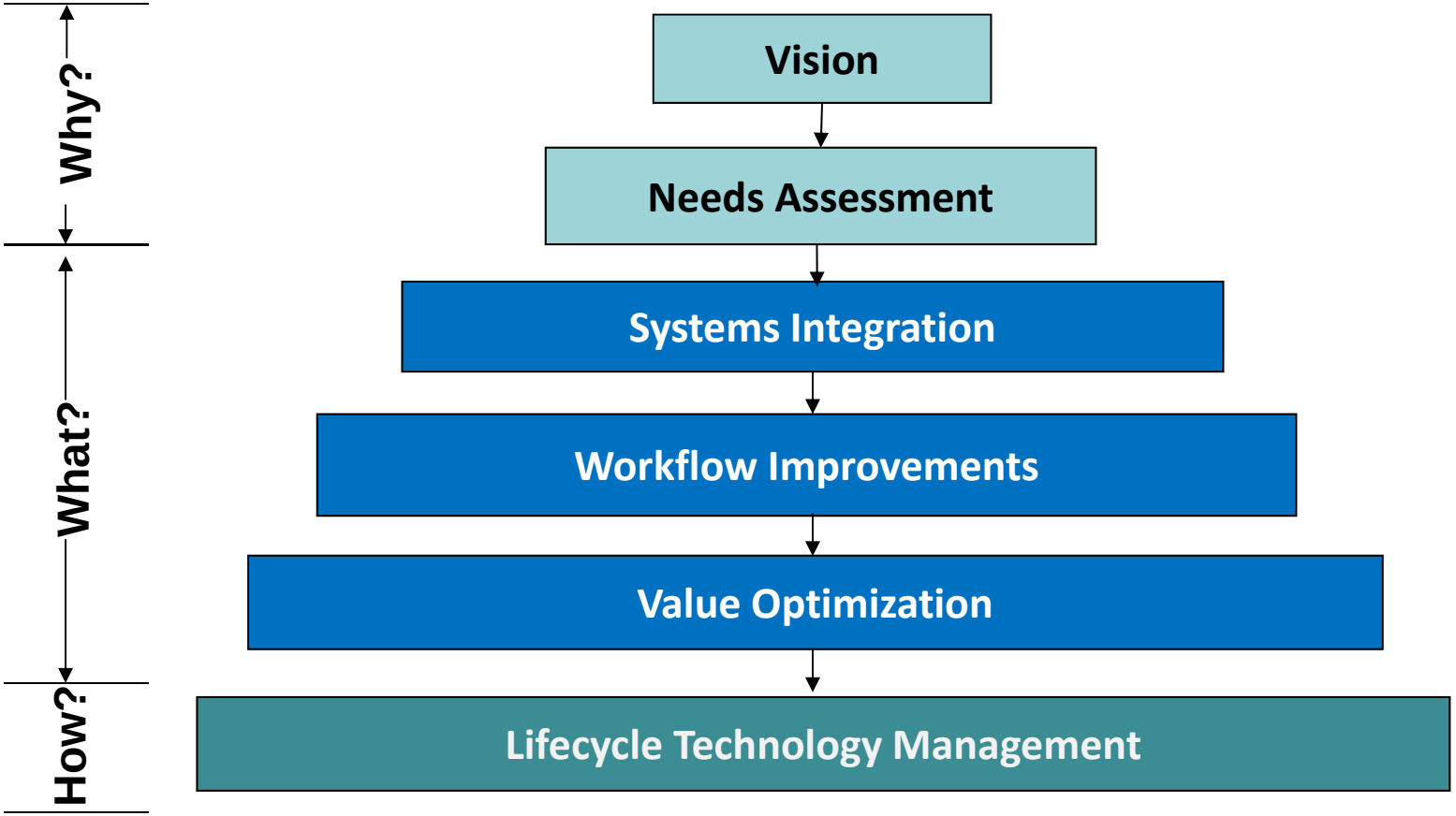
Key Issues Identified

Technology Navigation Sessions provide a structured, interactive process for quickly assessing and prioritizing healthcare technology needs and investments and answers the following questions:

- Which areas and metrics do you need to improve most?
- Which technologies and processes will have the best, most positive impact?
- How can we leverage technology to address the clinicians biggest frustrations and time wasters?
- Do we have an Integration Strategy? Who owns it?
- Do we have system or function redundancy?
- How can our IT, biomedical and facilities teams and systems work better together?
- Are you using your systems and technologies for uses beyond their original purpose?
- How can we leverage the technology investments we have already made as much as possible?

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Healthcare Technology Workshop Process

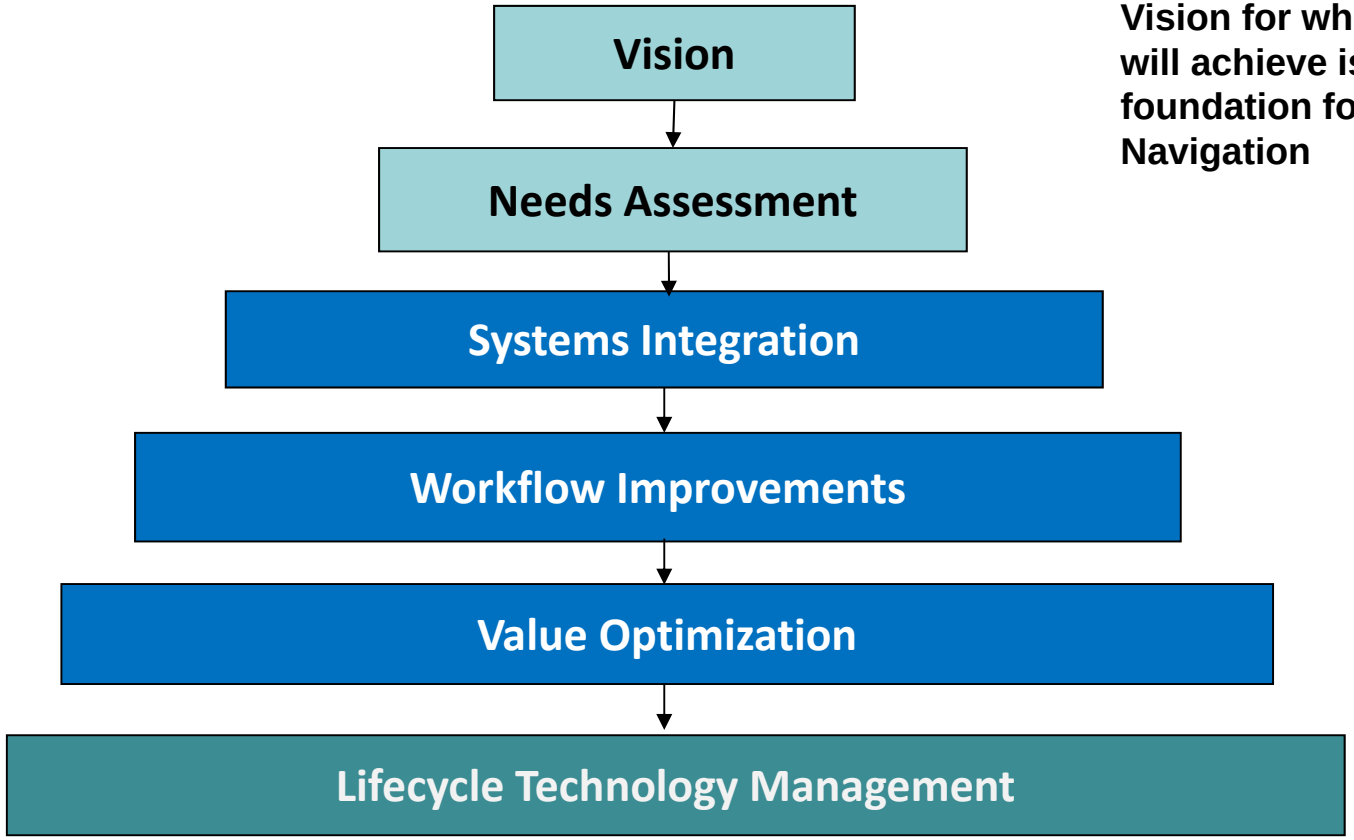


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Project Vision

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It all starts with the Vision



Vision for what the hospital will achieve is the foundation for Technology Navigation

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Project Vision

What do we want to accomplish over the next 3-5 years?

Why this, why now?

Who are our stakeholders?

What should our Strategy include?

Where should our focus be?

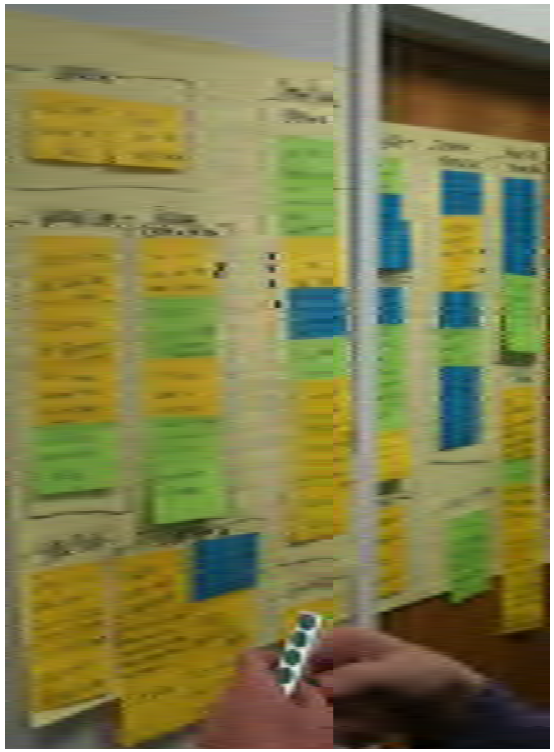
How do we want to utilize new technology and systems within our organization?

What makes us unique?

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Project Vision

What are key measures of success that the stakeholders would like to say has been accomplished at the end of the project?



Vision

Clinical
Non-clinical
Design team

- **Positive Patient/Family Experience (17 Votes)**
  - Happy/positive patients & families
  - Patient comfort through greatly improved building environmental control
  - Patients say "Wow"
  - We made a significant impact on patient experience!
  - Easy patient access
  - Improved privacy for patients/families
  - Better access to patient/family due to increased room size
  - Visually pleasing

- **Improved Technology Infrastructure (13 Votes)**
  - Successful clinical and bldg. system installations and integrations that enhance patient care and improve work flow (in budget - on time)
  - Increased flexibility to meet patient needs
  - Increased communication
  - Improved communication
  - Used technology to improve ability to deliver efficient healthcare
  - Cost-effective technology in place
  - Network infrastructure that will scale
  - Improved infrastructure to enhance patient and staff satisfaction
  - Provide facility that meets GSH "center of excellence" goals
  - Improved 23 measurable metrics in planning
  - Both users and patients will have access to technology with 0 pain

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Vision

Clinical
Non-clinical
Design team

- **Safe Environment (13 Votes)**
  - Safe environment
  - Best environment possible for care staff to work - safe and healthy
  - Secure environment
  - All elevators safe and easily accessible for bariatric patients
  - High safety awareness.
  - No falls/green status in PT outcomes
  - Safe state-of-the-art rooms for bariatric patients
  - We made patients safer and improved outcomes
  - 0 falls or serious safety events
- **Regional Center of Excellence (10 Votes)**
  - State-of-the-art facility locally - keeping patients in Vincennes
  - We draw from Evansville, Terre Haute and Indy; patients from there come here
  - A true center of excellence for heart services
  - A facility that exceeds all expectations of the public
  - Regional center of excellence
- **Enhanced Workflow (9 Votes)**
  - Fewer steps for caregivers
  - We streamlined the nurses' workflow down to one computer system for charting, reporting, order entry, reference, time & attendance, etc.
  - Technology that actually makes the clinician's job easier and not harder
  - The best workflow for staff
  - More efficient flow/staff convenience
  - Improved patient flow

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Vision

Clinical
Non-clinical
Design team

- **Increased Computer Utilization (4 Votes)**
  - Computing technologies are available when needed and invisible when not needed
  - Technology/computers as tools; fast; reliable
  - User-friendly systems for staff (workstations, etc.)
  - We're paperless
  - Utilization of a hands-free documentation/communication system for staff

- **Error Proof Design (4 Votes)**
  - Design of an error-proof flow of PT care (admission to discharge)
  - Error-free, seamless medication reconciliation

- **Energy Efficiency (3 Votes)**
  - Energy savings in an increasingly costly world
  - Energy efficient
  - More environment friendly

- **Successful Project Cost/Schedule Control (3 Votes)**
  - Met healthcare vision and stayed within budget
  - Achieve hosp. of future on hospital of past budget
  - "Future-proofing" protect investment
  - We're innovative in treatment with positive outcomes
  - Completed project with no change orders

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Needs Assessment

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Needs Assessment

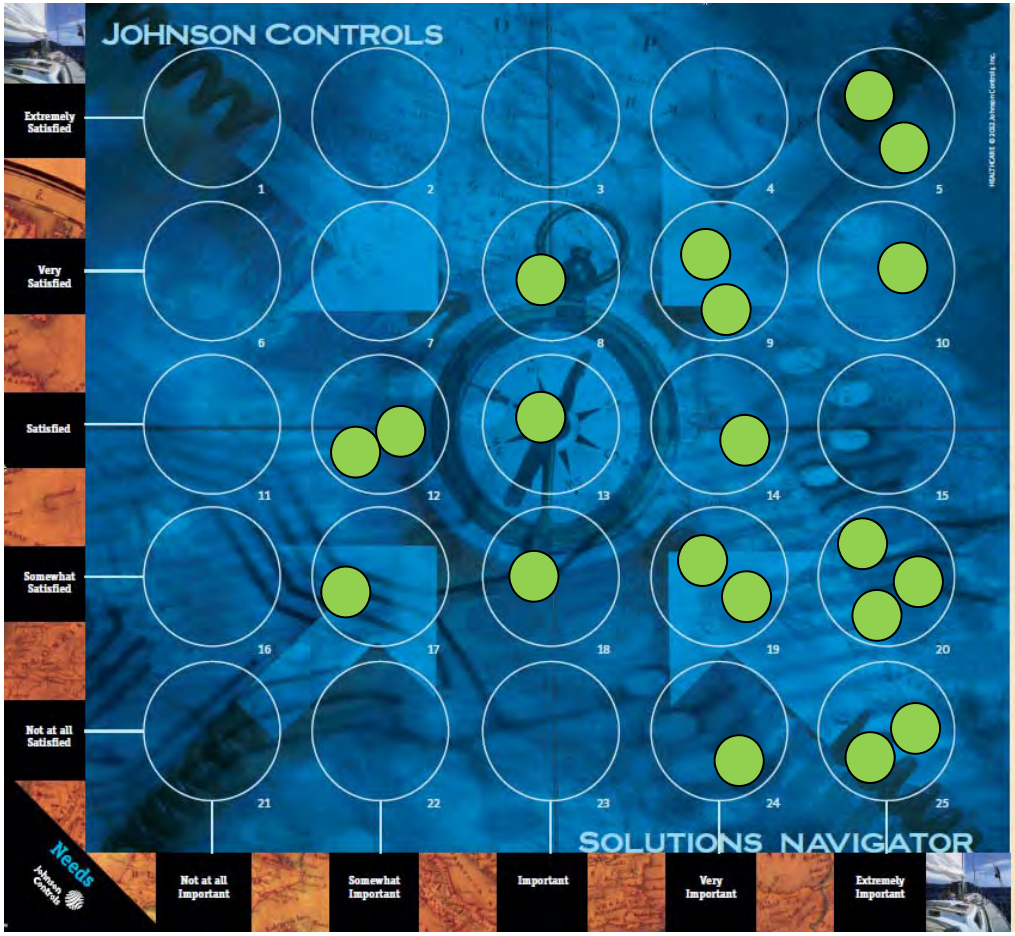
"Top 10" Healthcare Organizational Needs

(Based on needs assessment from 755 Healthcare Technology Workshop participants)

1. Reduce the incidence of medical errors
2. Attract and retain sufficient numbers of qualified nurses and technicians
3. Enhance the patient and family healthcare experience
4. Provide staff and physicians with convenient access to patient information
5. Provide effective data integration of disparate clinical information systems
6. Recruit and retain sufficient numbers of physicians in desired specialties
7. Maintain high levels of patient satisfaction
8. Improve clinical outcomes
9. Find sufficient sources of capital to meet hospital needs
10. Create a culture of patient-centered care across the hospital

Healthcare Technology Navigator™

Needs Assessment



FINANCIAL STEWARDSHIP

1 Increase local market share
2 Expand geographic coverage and reach
3 Increase levels of gift giving and philanthropy
4 Increase revenue from outpatient and ambulatory sources
5 Renovate or construct healthcare facilities to increase local competitiveness
6 Find sufficient sources of capital to meet hospital needs
7 Reduce the number of non-paying cases
8 Increase the level of medicare/medicaid reimbursements
9 Reduce expenses for medical supplies
10 Reduce facility operations and maintenance costs

RELATIONSHIP MANAGEMENT

11 Enhance the patient and family healthcare experience
12 Maintain high levels of patient satisfaction
13 Create a culture of patient-centered care across the hospital
14 Improve clinical outcomes
15 Provide care to indigent members of the community
16 Provide support for community programs and initiatives
17 Partner with local educational organizations to provide staff training
18 Recruit and retain sufficient numbers of physicians in desired specialties
19 Attract and retain sufficient numbers of qualified nurses and technicians
20 Attract and retain sufficient numbers of ancillary staff
21 Maintain high levels of staff and physician satisfaction
22 Improve relationships with physician groups

OPERATIONAL

23 Optimize [illegible] process w
24 Provide st[illegible] with conv[illegible] patient in[illegible]
25 Provide ef[illegible] routine, re[illegible]
26 Provide re[illegible] of intensi[illegible]
27 Introduce [illegible] ambulator[illegible] with chro[illegible]
28 Reduce th[illegible] errors
29 Respond [illegible] to patient
30 Comply w[illegible]
31 Implemen[illegible] clinical pr[illegible]
32 Prepare fo[illegible] and incen[illegible]
33 Provide h[illegible] infants an[illegible]
34 Provide h[illegible] hospital st[illegible]
35 Reduce th[illegible] injuries
36 Respond [illegible] emergenc[illegible]
37 Respond [illegible] situations

TECHNOLOGY

38 Upgrade clinical technology to remain locally competitive
39 Implement an EMR system for inpatient, outpatient and physician use
40 Provide effective data integration of disparate clinical information systems
41 Expand non-invasive surgery capabilities
42 Introduce expanded point-of-care technologies (testing)
43 Provide effective staff training on new systems and technology
44 Design systems and infrastructure for easy maintenance and operations
45 Design systems and infrastructure for easy expansion and upgrades
46 Provide enhanced data security for information systems
47 Comply with HIPAA regulations

Name _____
Title _____
Organization _____

Needs Categories:

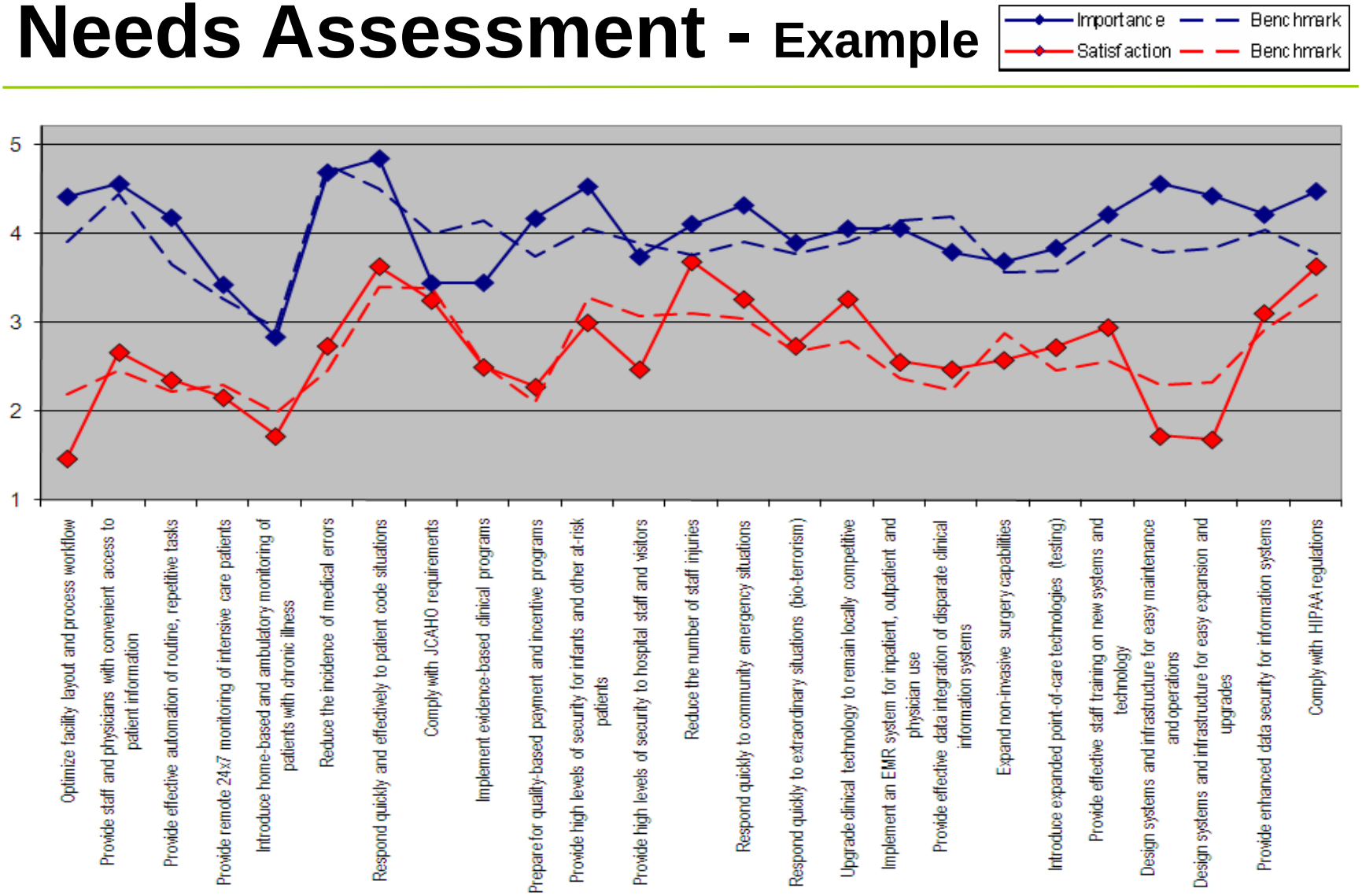
- Revenue Growth
- Resource Management
- Patients/Family
- Community
- Physicians/Staff
- Productivity
- Quality
- Health & Safety
- Technology
- Technology Management

How <u>important</u> is this need to the hospital from your perspective?

How <u>satisfied</u> are you with the hospital's ability to address this need today?

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Needs Assessment - Example



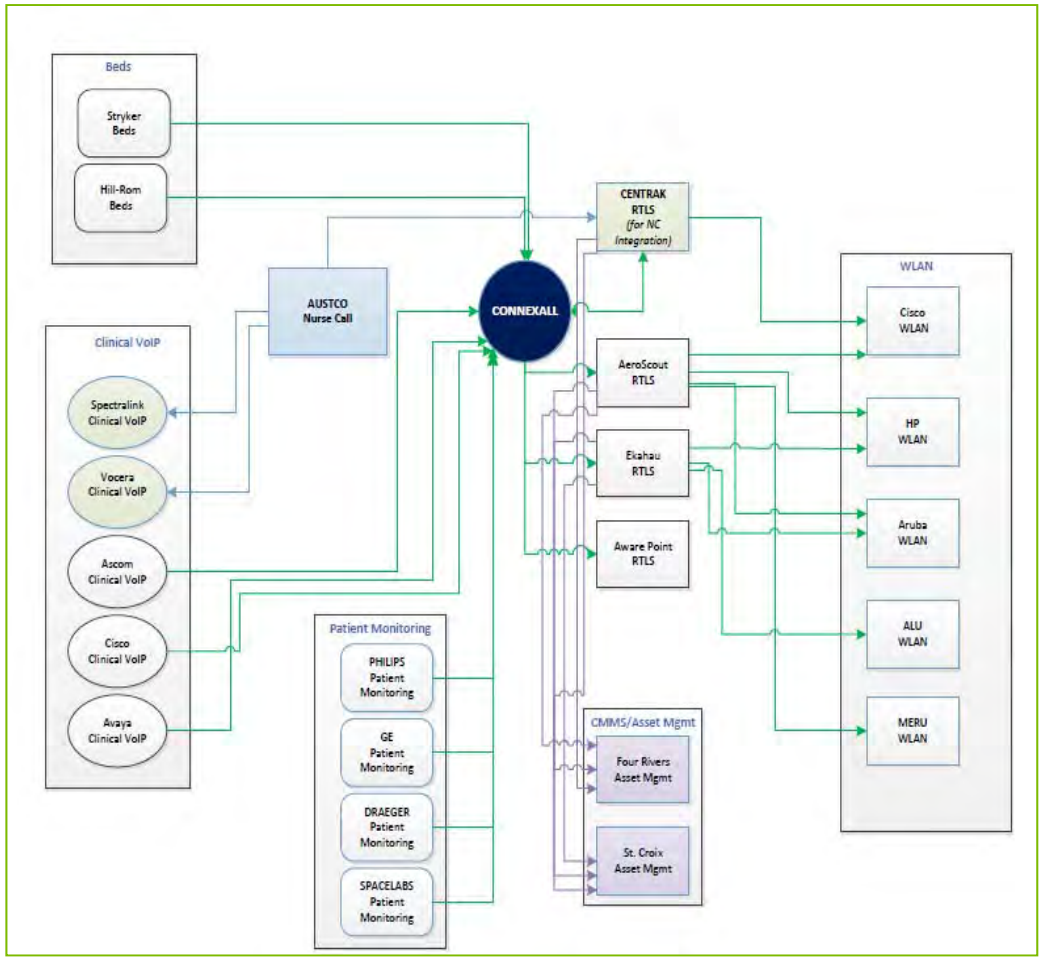
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Systems Integration

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Integration Review

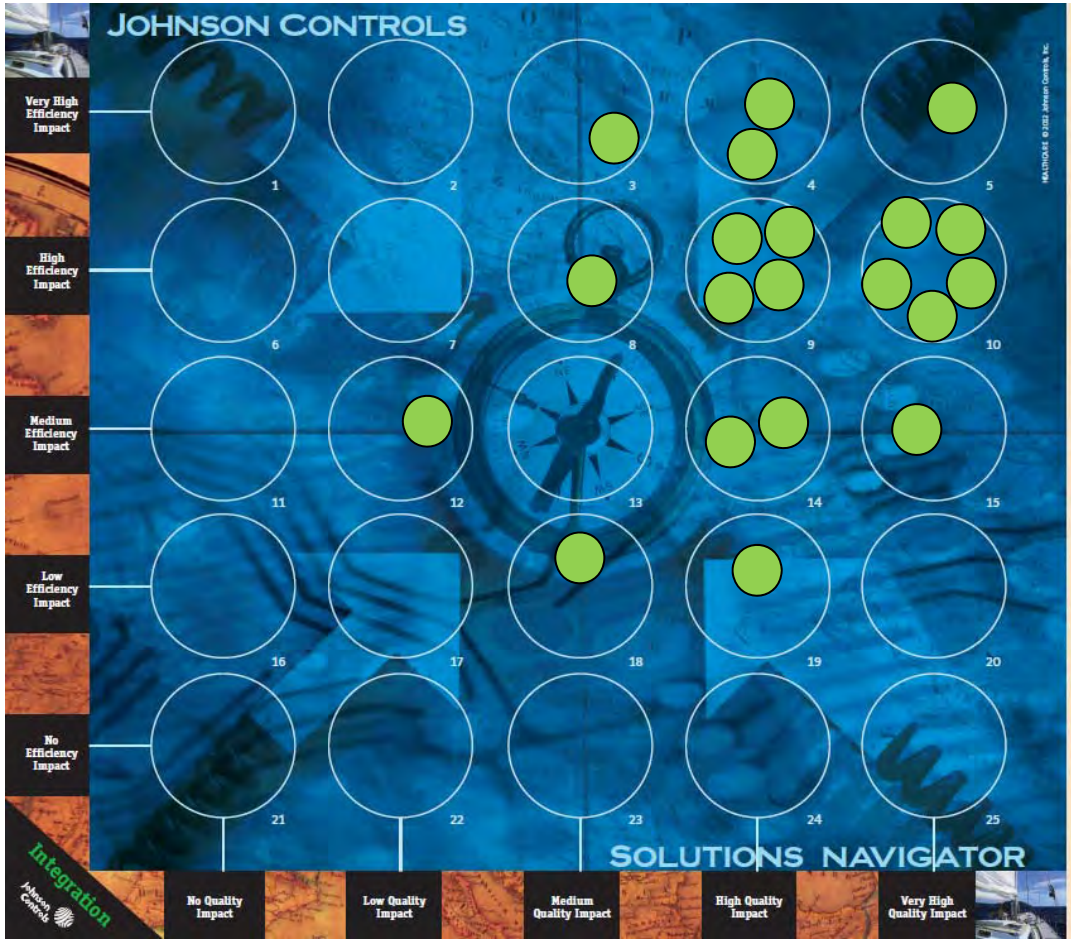
- Review hospital's Facility, Clinical and IT system environment
- Review HL7 interface maps for current facility
- Generate baseline integration matrix
- Leverage baseline for Technology Navigation Session



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Healthcare Technology Navigator™

Systems Integrations Assessment



1 Bed Management to ADT System
2 Bed Management to Patient Scheduling
3 Nurse Call to Infusion Pumps
4 Pharmacy Management to ADT System
5 Pharmacy Management to Infusion Pumps
6 Physician/Patient Portal to Patient Scheduling
7 ADT System to Communication Systems via RTLS
8 ADT System to Environmental Services via RTLS
9 ADT System to Food Service
10 ADT System to Patient Room Infotainment
11 Bed Management to Maintenance Management
12 Bed Management to RTLS
13 EMR to Food Service
14 EMR to Staff Directory
15 Infant Protection to Security System
16 Infusion Pumps to RTLS
17 Materials Management to RTLS
18 Nurse Call to Fire Alarm
19 Patient Wandering to Security System
20 Pharmacy Management to RTLS
21 Pharmacy Management to Security System
22 Surgery Scheduling to Building Automation System
23 Building Automation to Fire Alarm
24 Building Automation to Pneumatic Tube
25 Building Automation to Medical Gas
26 Building Automation to Refrigerator/Freezer Monitoring
27 Building Automation to Isolation Room
28 Building Automation to Electrical Switchgear/Generator
29 Building Automation to Maintenance Management
30 Building Automation to RTLS
31 Fire Alarm to Vertical Transport
32 Patient Room Infotainment to Food Service
33 Patient Room Infotainment to Building Automation
34 RTLS to Handwashing System
35 Security System to Security Monitoring (CCTV)
36 Security System to Vertical Transport
37 Security System to Fire Alarm
38 Security System to RTLS
39 Building Automation to Network Management
40 Maintenance Management to Help Desk
41 Security System to Staff Directory
42 Security System to Time & Attendance System
43 Financial Systems to Time & Attendance System
44 Financial Systems to Patient Billing
45 Help Desk to Network Management
46 Time & Attendance System to Staff Directory
47 Uninterruptible Power Supply to Network Management

KEY:
CLINICAL SYSTEMS
BUILDING SYSTEMS
BUSINESS SYSTEMS

ASSUMED TECHNOLOGY SYSTEMS INTEGRATIONS
EMR to ADT System
EMR to CPOE
EMR to Pharmacy Management
EMR to Patient Monitoring
EMR to Laboratory Information System
EMR to Physician/Patient Portal
EMR to IV Pumps
EMR to Radiology PACS
CPOE to Pharmacy Management
CPOE to Laboratory Information Sy
Nurse Call to ADT System
Nurse Call to Patient Monitoring

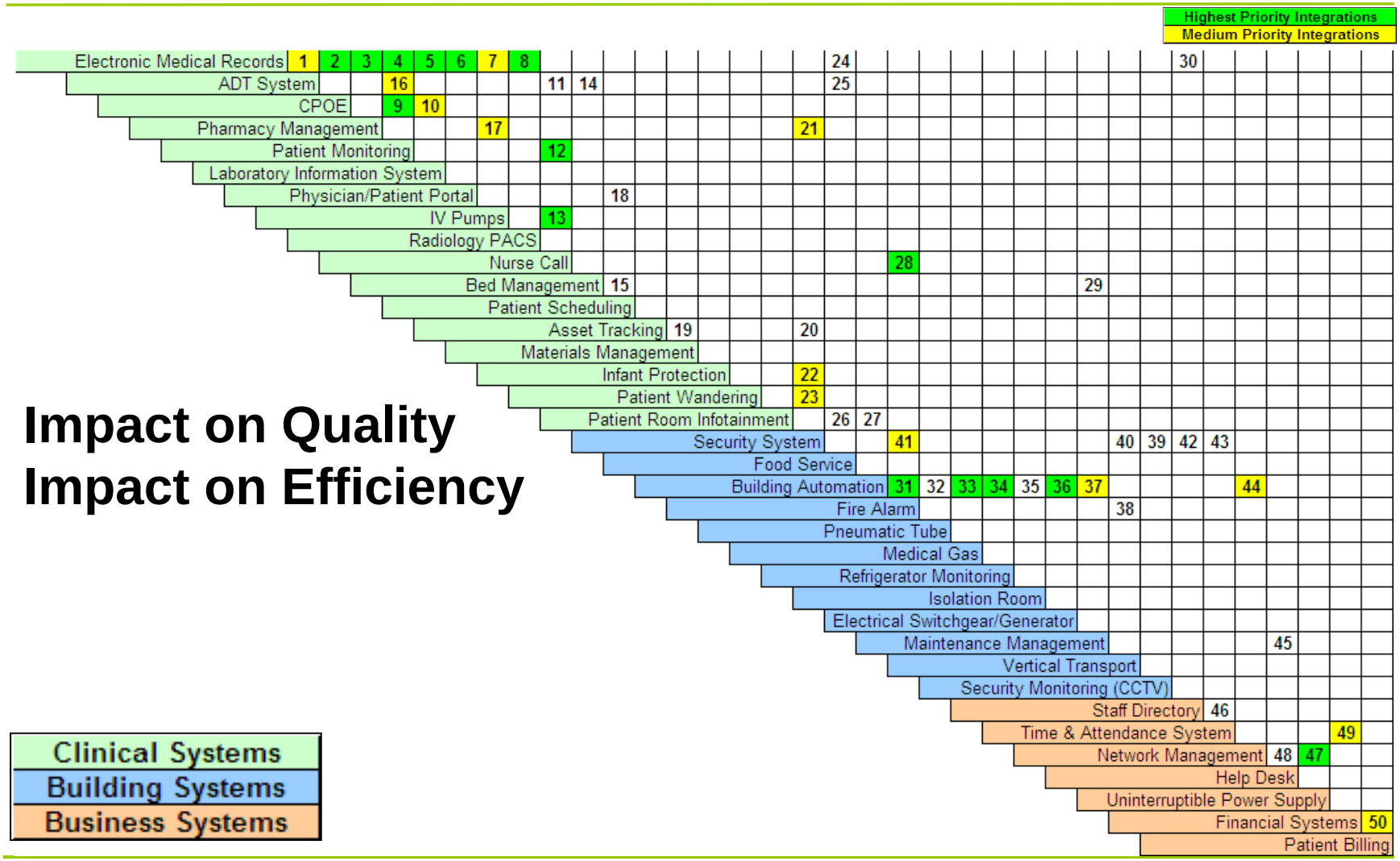
What impact to <u>quality</u> will this integration have on the hospital?

What impact to <u>efficiency</u> will this integration have on the hospital?

Integrations Between:
- **Clinical Systems**
- **Building Systems**
- **Business Systems**

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Systems Integration



Impact on Quality
Impact on Efficiency

Clinical Systems
Building Systems
Business Systems

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Process Improvement

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Process Improvements

Before

- No alarms to pagers, phones, nurse call
- Poor phone access between caregivers
- Inefficient
- Noisy environment
- Confusion regarding location of alarm

After

- All patient alarms flow to "handset"
- Visual tracing, type of alarm, patient location
- Alarms to include physiologic alarms and equipment
- No audible alarms in the room
- Three tier escalating of alarms

Benefits

- Safety
- Decreased patient/family anxiety
- Prompt response by the right person
- RN has information - knows what he/she is responding to

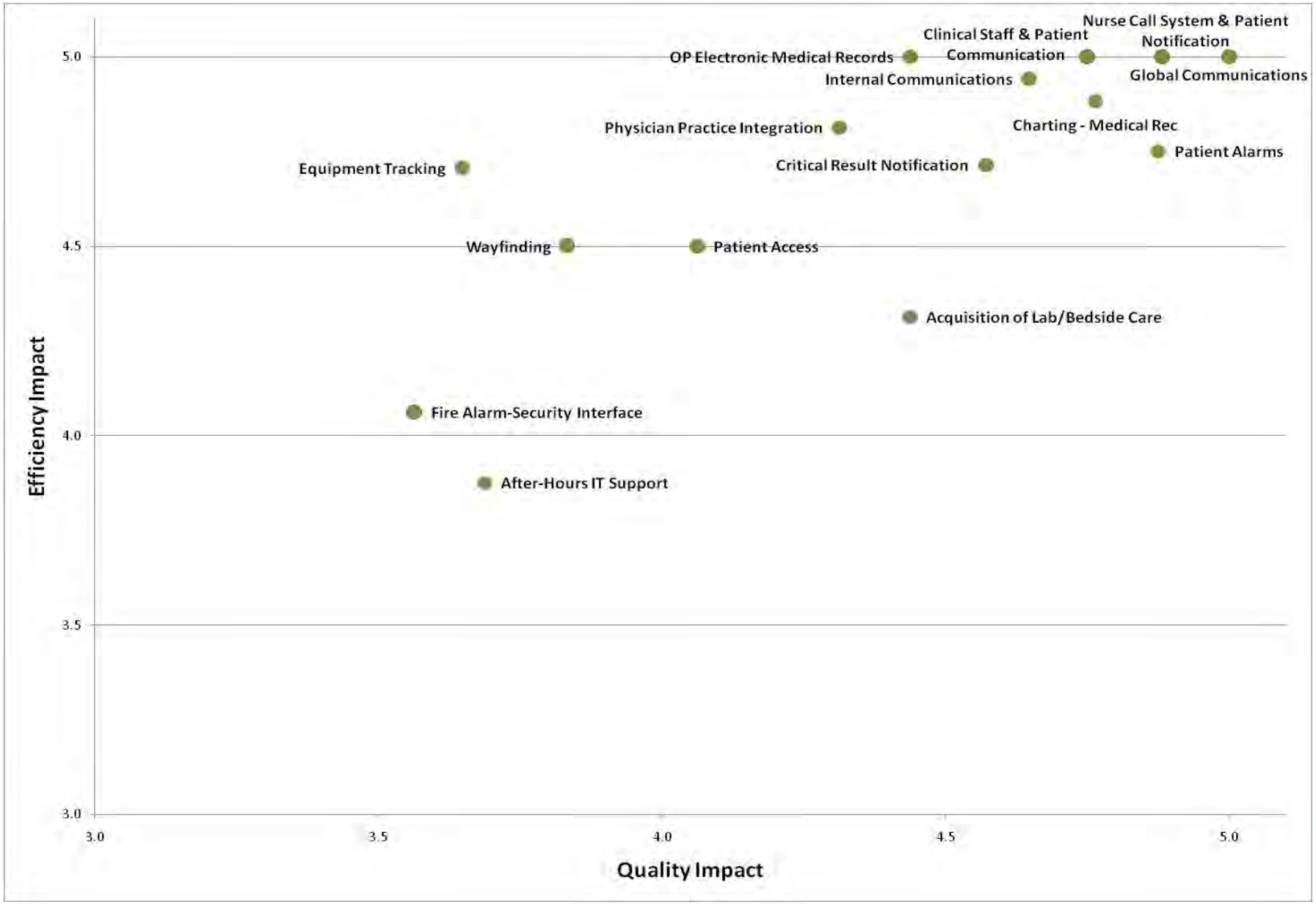


Process Improvements

#	Application	Before	After	Benefits
1	**Clinical Staff & Patient Communication**	Paging systems and house phones	Internet phones and hands-free devices	Quick and efficient communication; faster response time
2	**Nurse Call System & Patient Notifications**	All calls routed to a central dispatch	Routing of calls to the appropriate caregiver	More timely and accurate patient care, which will increase safety and satisfaction
3	**Equipment Tracking**	Equipment inventoried, but not tracked electronically; manual logs	Real-time location of devices; 'service needed' indicators	Easy location of equipment; cost-effective utilization
4	**Fire Alarm/Security Interface**	Some notification exists (Tim Miller)	Quicker notification to security and First Responders	Improve safety and reduce property damage
5	**Global Communication**	Communication tied to telephone, causing delays in providing care to due to unanswered phones; this leads to physician dissatisfaction, patient safety issues, lack of tracking within facility; off-site often left out of communication	Tied to data and telephones communication system; shared between IP/OP/Off-site and physicians; iPads for meetings	Increase in satisfaction of EE/physicians/Pt, safety, response time, accessibility; decrease in delays
6	**Patient Access**	Excessive time and paperwork; multiple sites/services; integration issues with facility and physician systems; issues with patient satisfaction and order clarification	Order intake process; integrated systems; ease of use; paperless and online signatures; multiple electronic access points or platforms of information; overall patient satisfaction	Patient and physician satisfaction; increase in staff efficiency, reimbursement and accuracy
7	**OP Electronic Medical Records**	Paper charting; IP and OP not integrated; duplication of effort; patient dissatisfaction and safety issues; inefficient and inaccurate	Common database; integrated OP & IP within facility and physicians shared clinical documentation system	Increased efficiency, safety, satisfaction, reimbursement
8	**Way Finding**	Poor signage, difficult parking and lack of assistance leading to patient dissatisfaction, employees not parking in the correct areas, lost patients	Zone codes, signage & parking dedicated to specific areas; increased valet parking; increased assistance out of the building; increased anticipation of the needs	Increased patient satisfaction, safety and efficiency

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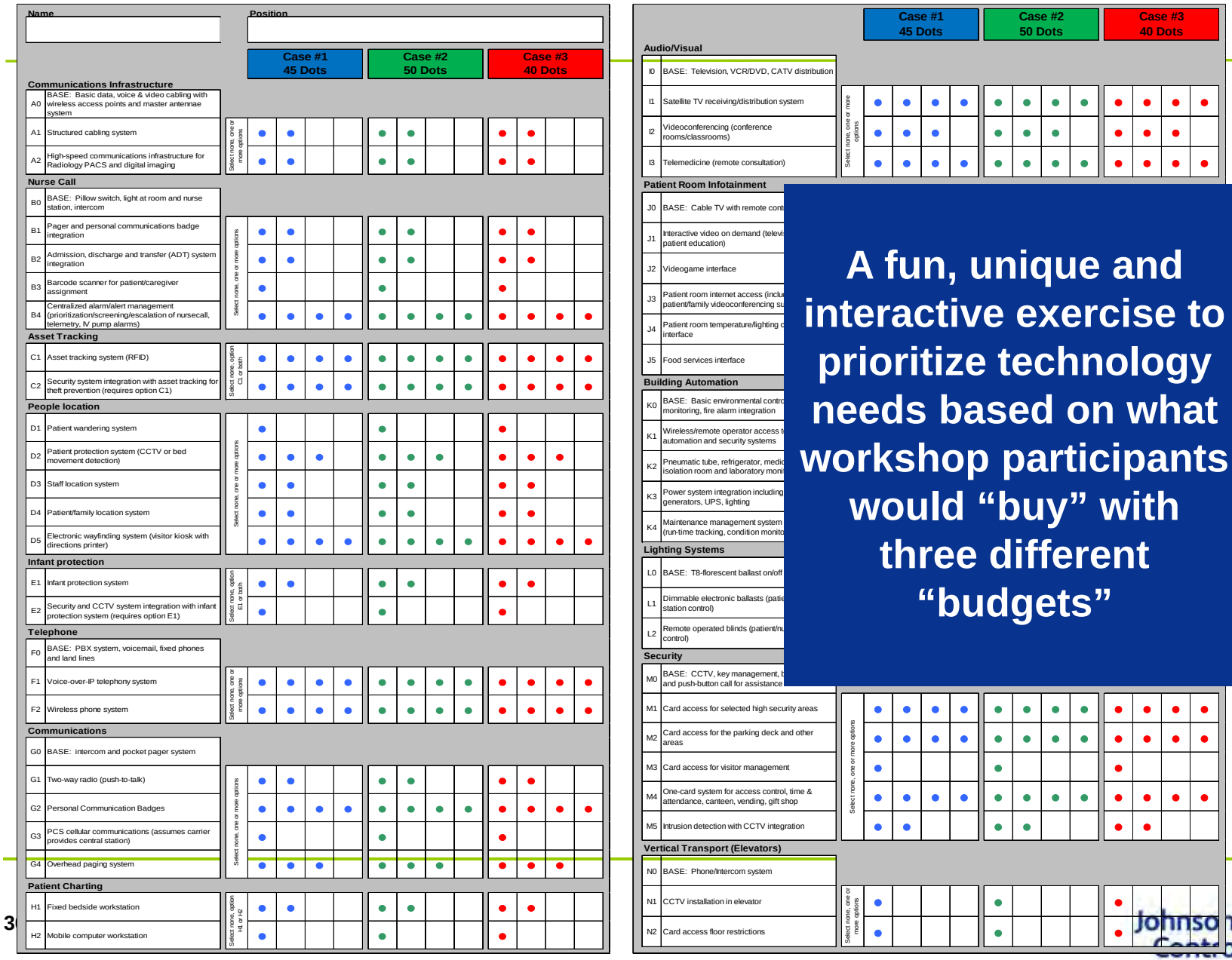
Process Improvement Impact Analysis



Value Optimization

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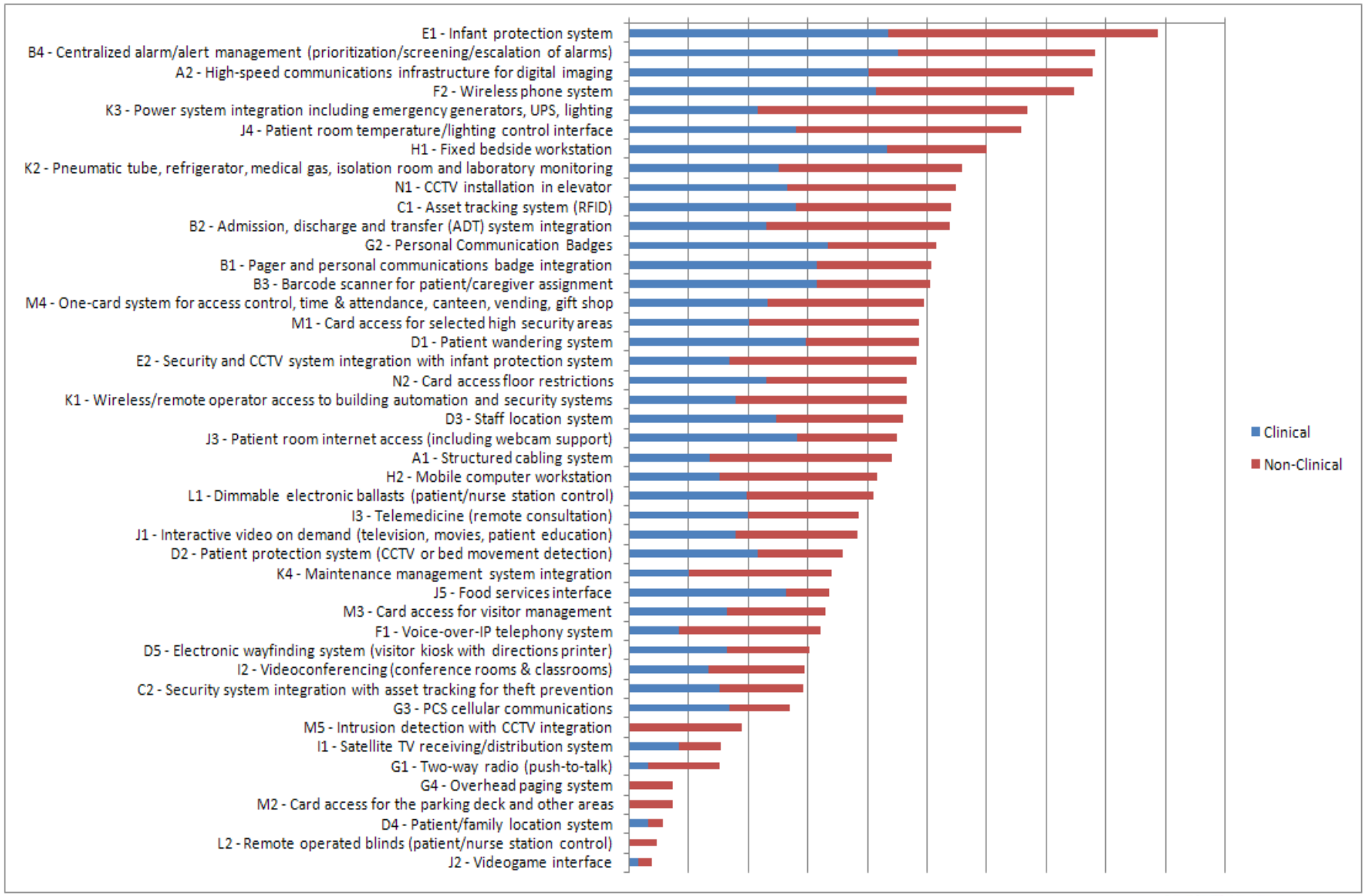
Value Optimization Technology Options



A fun, unique and interactive exercise to prioritize technology needs based on what workshop participants would "buy" with three different "budgets"

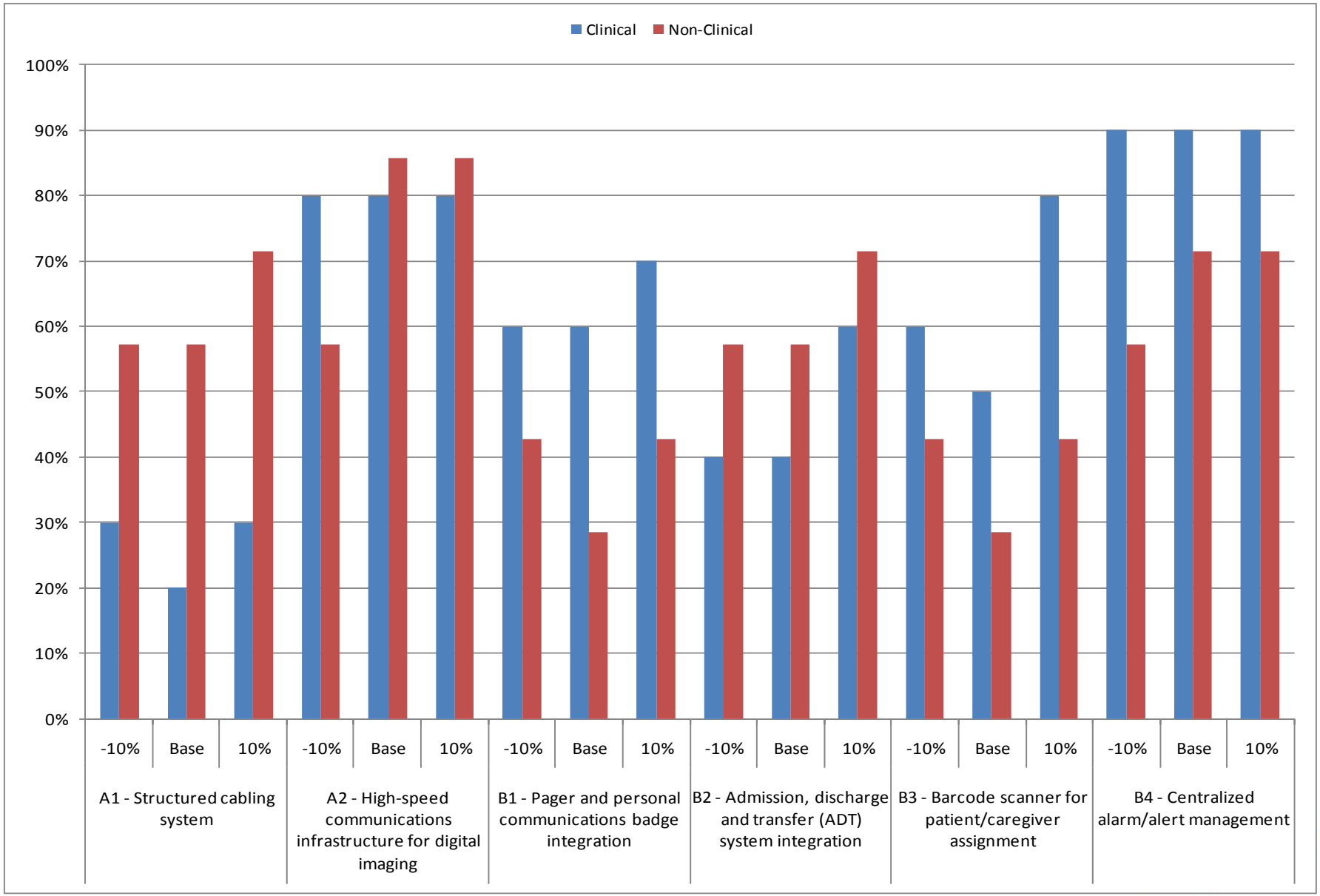
Value Optimization (Overall Priority)

Discounted relative percentage of participants selecting each option



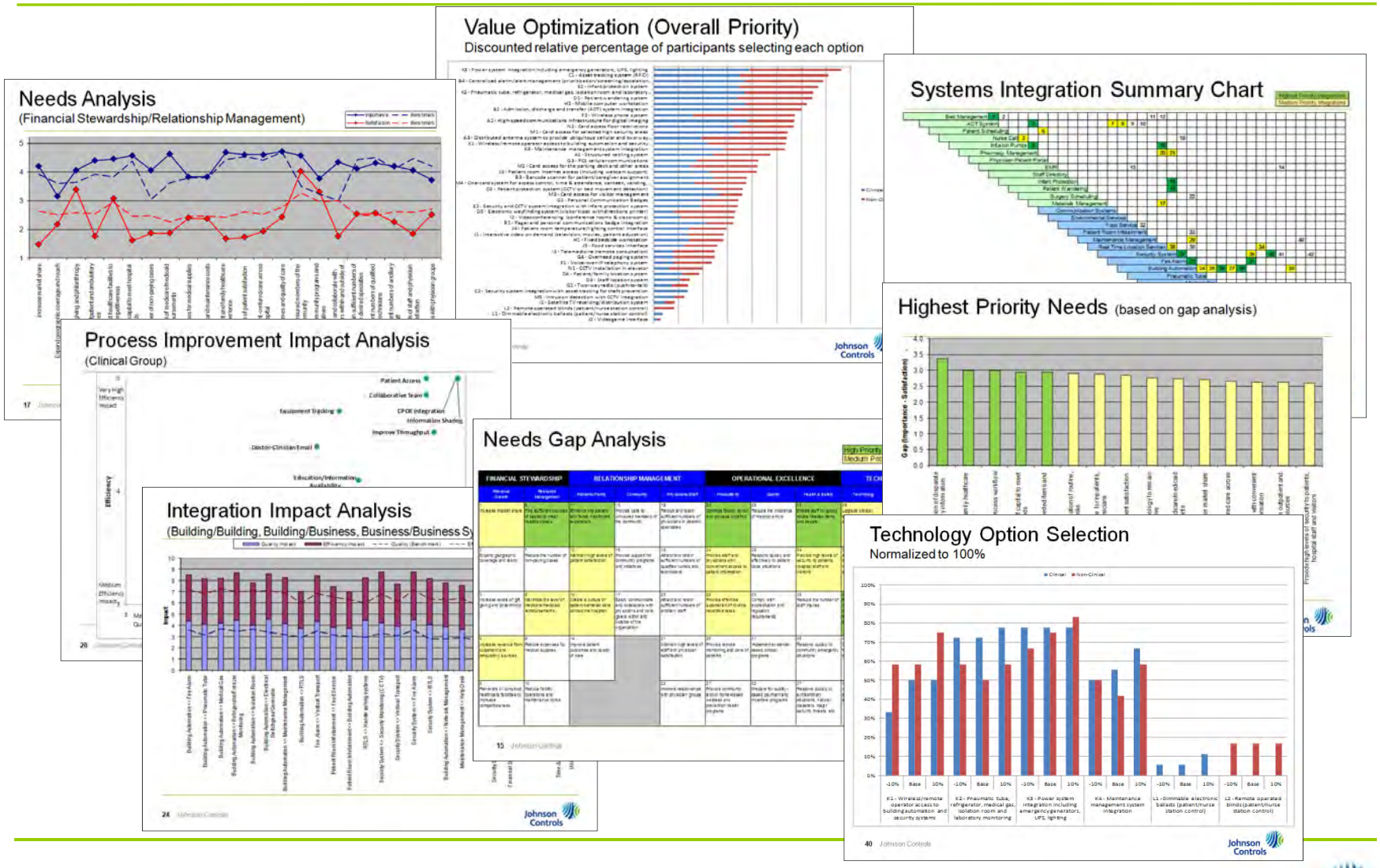
Technology Option Selection

Normalized to 100%



Data Analysis & Reporting

Presents & Prioritizes Needs and Technology Integrations



Day in the Life Example: *Appointment Arrival*

Welcome Tim!

Let's complete your check-in.







When Tim arrives, his picture and name pop up on the Ambassador's tablet.

The Ambassador greets Tim by name and accesses his patient information.

The Ambassador finishes Tim's check-in, including forms and copay.

The Ambassador lets him know that he will receive a text message (or his pager will sound) when the doctor is ready to see him.

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Thank You

Brendon Buckley
Building Wide Systems Integration Director, North America
Johnson Controls, Inc.