

Medical Equipment Planning in Healthcare—Program Leveling

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St. Luke's Health System

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IMAGING CONFERENCE & EXPO

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Overview

Introductions

Who and Why

Refresher – What is technology forecasting?

Technology Forecasting Maturity

Base

Mid

Peak

Discussion with Q&A



The WHO

Dean Skillicorn

- Certified Biomedical Equipment Technician (CBET)
- Bachelor degree in Business
 - Oregon State University
- Avid fly fisherman



Carol Davis-Smith

- Certified Clinical Engineer (CCE)
- BS in Bioengineering
 - University of Dayton
- MS in Engineering
 - University of Arizona
- Former NCAA Division I student-athlete who “went pro” in something other than sports



The WHY

Forecasting replacement and new healthcare technology requirements is a major challenge for every health delivery organization. Creating a plan is even harder.



To share a roadmap and available resources to assist you in designing a replacement forecasting – equipment planning – program that supports your organization's unique requirements and constraints.

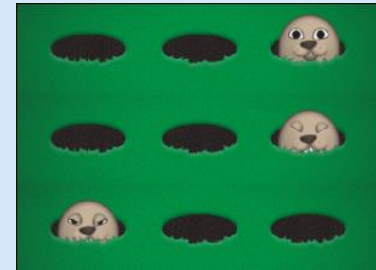


The WHAT

Technology Forecasting – Equipment Planning

- Anticipating and planning for
 - Upgrades
 - Reallocation
 - Replacement
 - Introduction of new technology and products
- Balancing clinical, financial, and technical perspectives
- It is **NOT** whack-a-mole or wish lists

It's more like a pyramid.



The desert floor – Below the pyramid base

Below the base of the pyramid is reactive – not a program

Climbing the pyramid represents increasing levels of maturity

Dark and foreboding

Lack of visibility and trust

Questionable strategy

Minimal “success”



The pyramid base

The base of the pyramid provides a strong foundation for a program

Policy – Process – Procedure

Basic data

Focus on 1-2 categories

- Diagnostic imaging
- Surgical services
- Fleet management



The Pyramid Base

PROCESS

- Data collection
- Data analysis
- Preliminary recommendations
- Key clinical stakeholder review
- Refined recommendations
- Key financial stakeholder review
- Prioritized recommendations

RESOURCES

- Key stakeholders identified
 - Influencers versus Decision-Makers
- CMMS
- Financial asset management system
- Dedicated resource(s) to execute process



The Pyramid Base

CMMS Data

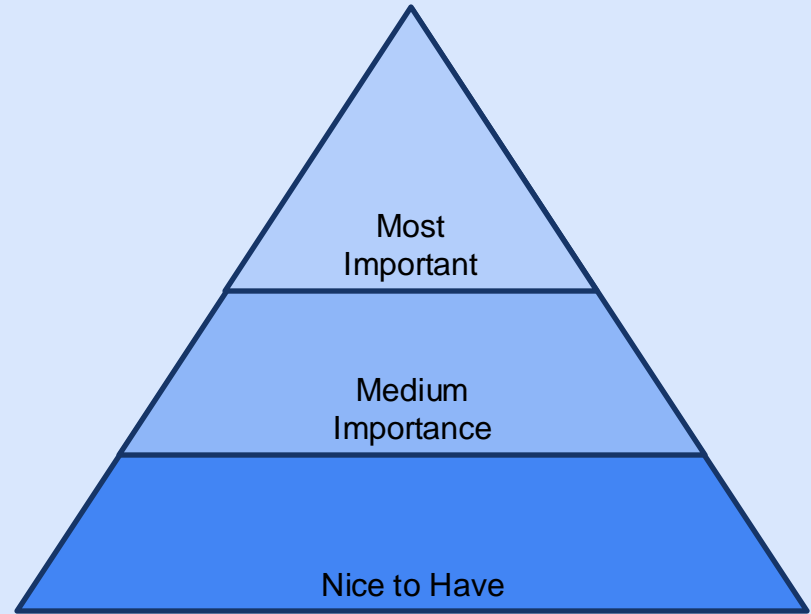
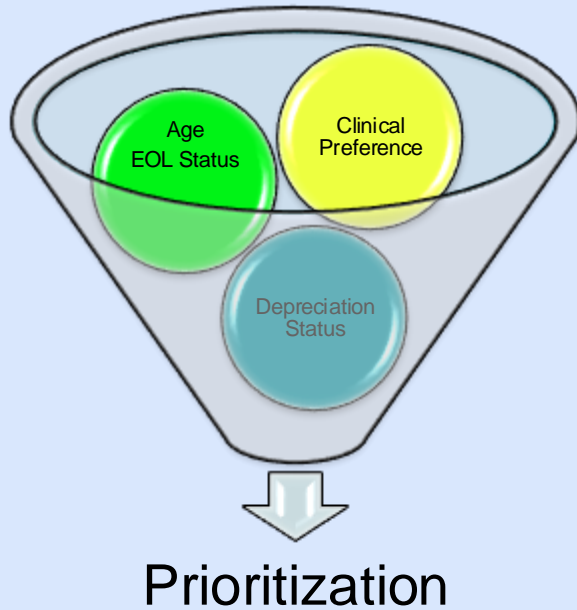
- Manufacturer
- Model name/number
- Purchase date
- Installation (activation) date
- Cybersecurity attributes
 - Operating system
 - Cyber risk score

Financial Asst Mgmt System Data

- Capital threshold(s)
- Depreciation status



The Pyramid Base



Halfway up the pyramid

At the halfway point, the pyramid introduces greater transparency and trust

Policy – Process – Procedure

Basic data → **Advanced data & analytics**

Focus on **2+ categories collectively**

Diagnostic imaging

Surgical services

Fleet management

The Pyramid Base

PROCESS

- **Key clinical stakeholder engagement**
- **Key financial stakeholder engagement**
- Data collection
- Data analysis
- Preliminary recommendations
- Key clinical stakeholder review
- Refined recommendations
- Key financial stakeholder review
- **Refined and** Prioritized recommendations
- **Formal business case**

RESOURCES

- Key stakeholders identified
 - Influencers versus Decision-Makers
- CMMS
- Financial asset management system
- **Financial strategies, goals, and objectives**
- **Clinical utilization – historic data**
- **Cross-functional** dedicated resource(s) to execute process



The Pyramid Base

CMMS Data

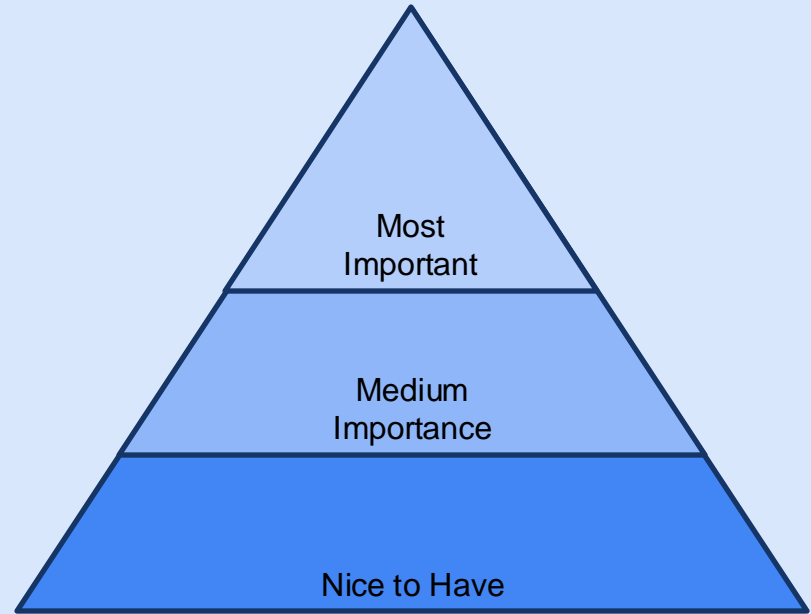
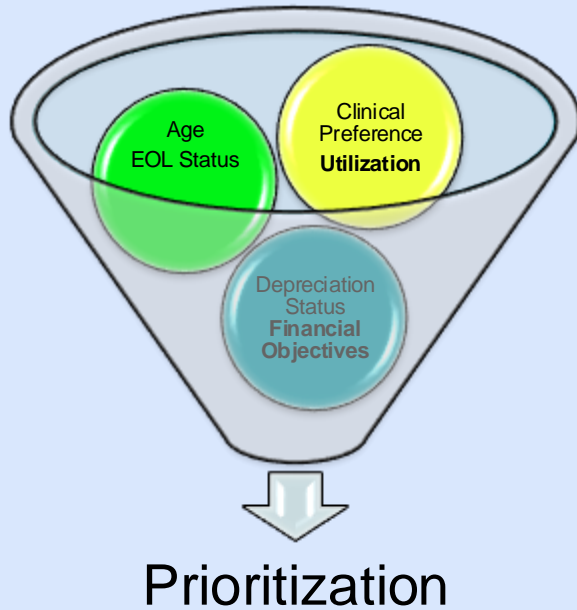
- Manufacturer
- Model name/number
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- Installation (activation) date
- Cybersecurity attributes
 - Operating system
 - Cyber risk score
- **Maintenance history**

Financial Asst Mgmt System Data

- Capital threshold(s)
- Depreciation status
- **Capital funding processes and thresholds**
 - **Medical equipment & systems**
 - **IT equipment & systems**
 - **Construction & renovation projects**



The Pyramid Base



St. Luke's Health System

Serving Southern Idaho, Eastern Oregon and Northern Nevada

As the only Idaho-based, not-for-profit, community-owned and community-led health system, St. Luke's is dedicated to our mission to improve the health of people in the communities we serve.



Evolving a Technology Management Strategy

Current State Progression

- ✓ Leverage HTM team to consult on front-end replacement replanning
- ✓ Outlined multi-year replacement roadmaps for proactive and predictable capital replacement plans
- ✓ Implemented a technology platform to track prioritization plans and move away from spreadsheets
- ✓ Created a review cycle for all modalities to continuously refresh replacement plans

Imaging Modality Review Cycle

Imaging Equipment Replacement | 3 month review cycle

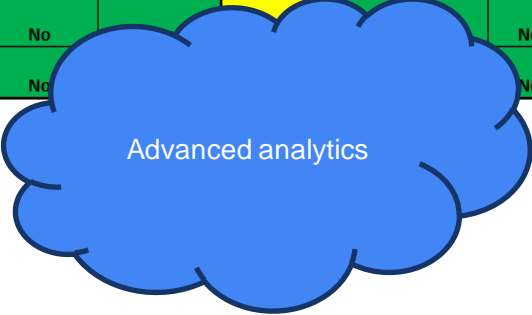
Modalities	2022 Review Start	2023 Review Start
Cardiology PVL/Echo Ultrasound	Mar-22	Mar-23
Molecular (PET/CT)	Mar-22	Mar-23
Rad Fluoro	Jun-22	Jun-23
DEXA Bone Density	Jun-22	Jun-23
Mammography	Jun-22	Jun-23
General Radiology	Jun-22	Jun-23
Molecular Nuclear Medicine	Oct-22	Oct-23
Cardiovascular/Interventional	Oct-22	Oct-23
C-Arms	Oct-22	Oct-23
Mini C-Arms	Dec-22	Dec-23
Injectors	Dec-22	Dec-23
MRI	Jun-23	Jun-23
CT	Jun-23	Jun-23
Portable X-Ray	-	Jan-23
General Ultrasounds	-	Jan-23
POC Ultrasound	-	Jan-23

- ✓ Established a 3-month review period for each modality led by HTM to validate data
- ✓ Department leaders then review and confirm prioritization for replacement within the modality
- ✓ Capital Portfolio Manager facilitates final prioritization exercise and creates replacement plan justification for executive approval
- ✓ Finance and Executives endorse or modify recommendations for inclusion in the capital plan
- ✓ Supply Chain engaged vendors for equipment selection, negotiation and installation with approved replacement plan
- ✓ Re-review the modality replacement plan annually

Implementing Imaging Replacement Roadmap

Technology Assessment

Equipment Information	Operating and System Software with CyberSecurity						End of Product Life Information and Scoring			
	Operating System	Software Rev	Windows Upgrade?	Upgrades Available?	CyberSecurity Threat Status	Cyber Security Remediation?	Technology Status	EOPL Date	EOL Date	EOS Date
Equipment Name/Location	Win 7	4	Yes	Yes	Yes	Yes	Mature	No	No	No
Equipment Name/Location	Win 7	2	Unknown	Unknown	Yes	Yes	Mature	Yes	No	No
Equipment Name/Location	Win 7	2	Unknown	Unknown	Yes	Yes	Mature	No	No	No
Equipment Name/Location	Win 7	2	Unknown	Unknown	Yes	Yes	Mature	No	No	No
Equipment Name/Location	Win 7	2	Unknown	Unknown	Yes	Yes	Mature	No	No	No
Equipment Name/Location	Win 7	2	Unknown	Unknown	Yes	Yes	Mature	No	No	No
Equipment Name/Location	Win 7	2	Unknown	Unknown	Yes	Yes	Mature	No	No	No
Equipment Name/Location	Win 7	2	Unknown	Unknown	Yes	Yes	Mature	No	No	No
Equipment Name/Location	Win 10	5	NA	NA	No	Yes	Declining	No	No	No
Equipment Name/Location	Win 10	5	NA	NA	No					No
Equipment Name/Location	Win 10	5	NA	NA	No					No



Lengend	
Current	1-5 yrs
Matured	6-7 yrs
Declining	8-10 yrs
Obsolete	11-14 yrs
Sunset	15-17 yrs
Beyond Sunset	17+ yrs

End of Product Life (EOPL/EOM)

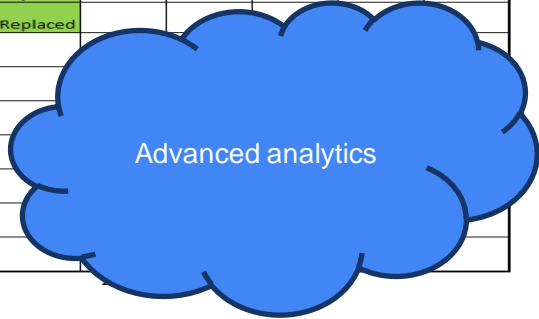
End of Life (EOL)

End of Service Life (EOSL)/EOS)

Implementing Replacement Roadmaps

Replacement Plan Modeling

Equipment Information	Operating and System Software with CyberSecurity						End of Product Life Information and Scoring				Replacement Plan Modeling					
	Operating System	Software Rev	Windows Upgrade?	Upgrades Available?	CyberSecurity Threat Status	Cyber Security Remediation?	Technology Status	EOPL Date	EOL Date	EOS Date	FY23	FY24	FY25	FY26	FY27	FY28
Equipment Name/Location	Win XP or older	NA	No	No	Yes	No	Sunset	Yes	Yes	Yes		100,000				
Equipment Name/Location	Win XP or older	NA	No	No	Yes	No	Sunset	Yes	Yes	Yes		100,000				
Equipment Name/Location	XP	4.9.5.9	No	No	Yes	No	Sunset	Yes	Yes	Yes			100,000			
Equipment Name/Location	XP	4.9.5.9	No	No	Yes	No	Sunset	Yes	Yes	Yes			100,000			
Equipment Name/Location	XP	9.1.0.12	No	No	Yes	No	Sunset	Yes	Yes	Yes	Replaced					
Equipment Name/Location	XP	9.1.0.12	No	No	Yes	No	Sunset	Yes	Yes	Yes	Replaced					
Equipment Name/Location	WIN7	9.3.0.2	Unknown	Unknown			Declining	No	No	No						
Equipment Name/Location	XP	9.1.0.12	No	No	Yes	No	Sunset	Yes	Yes	Yes						
Equipment Name/Location	XP	9.1.0.14	No	No	Yes	No	Sunset	Yes	Yes	Yes						
Equipment Name/Location	XP	9.1.0.14	No	No	Yes	No	Sunset	Yes	Yes	Yes						
Equipment Name/Location	XP	9.1.0.14	No	No	Yes	No	Sunset	Yes	Yes	Yes						
Equipment Name/Location	XP	9.1.0.14	No	No	Yes	No	Sunset	Yes	Yes	Yes						
Equipment Name/Location	WIN7	9.3.0.2	Unknown	Unknown			Declining	No	No	No						
Equipment Name/Location	XP	9.1.0.14	No	No	Yes	No	Sunset	Yes	Yes	Yes						



Base replacement plan modeling by fiscal year on technology assessment. Adjust between budget years with finance partners.

At the top of the pyramid

At the peak, the pyramid seeks to optimize the forecast

Policy – Process – Procedure

Basic data → Advanced data & analytics → **Expert data & analytics**

Consideration of all categories collectively

- Diagnostic imaging
- Surgical services
- Fleet management

Established fund for core replacement requirements

The Pyramid Base

PROCESS

- Key clinical stakeholder engagement
- Key financial stakeholder engagement
- Data collection
- Data analysis
- Preliminary recommendations
- Key clinical stakeholder review
- Refined recommendations
- Key financial stakeholder review
- Refined and Prioritized recommendations
- Formal business case **with operational expense forecasts**
- **Process for monitoring achievement of business case benefits**

RESOURCES

- Key stakeholders identified
 - Influencers versus Decision-Makers
- CMMS
- Financial asset management system
- Financial strategies, goals, and objectives
- Clinical utilization – historic data
- Cross-functional dedicated resource(s) to execute process
- **External expertise**
 - **Technical assessment firms – e.g., payors**
 - **Healthcare strategy firms – e.g., Sg2**



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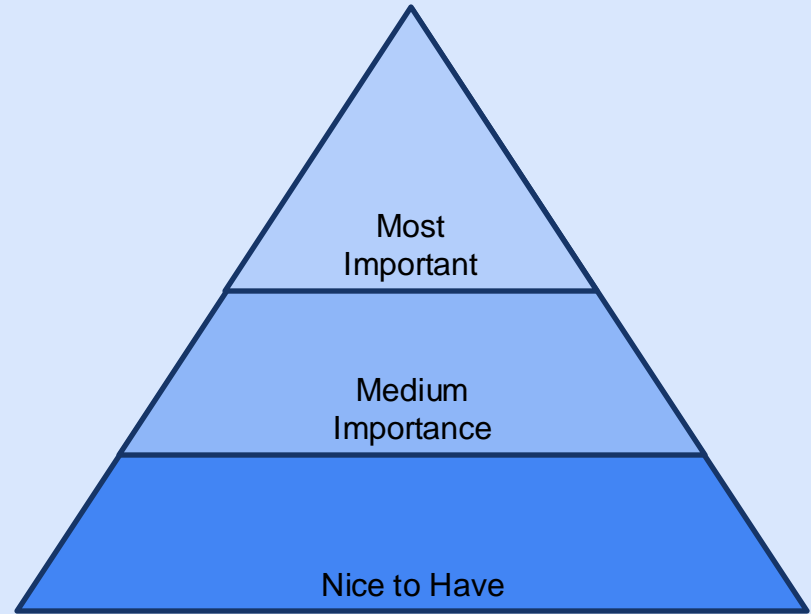
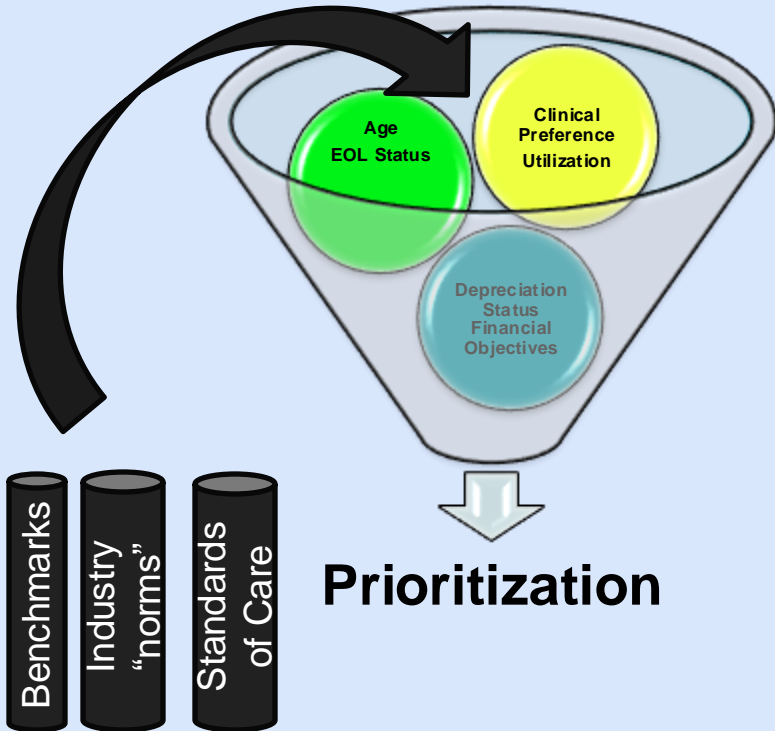
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- **Benchmarks**
 - **Internal and/or external**

Financial Asst Mgmt System Data

- Capital threshold(s)
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- **Benchmarks**
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The Pyramid Base



Technology Forecasting – Equipment Planning Program Maturity

Where are you?

Discussion with Q&A

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Thank You!

Enjoy the Conference!

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