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LEARNING OBJECTIVES

1. Define five types of obsolescence in sterile processing departments
2. Discuss the potential benefits that can be derived from obsoleting equipment
3. Understand how to develop a department obsolescence plan

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SELF-STUDY SERIES

Can you afford to ignore obsolescence?

by Heide Ames

If you say “obsolescence” to sterile processing managers, the first thought that comes to their minds is “major expenditure to replace equipment.” Many managers have been heard to say, “I’m going to use that sterilizer until it stops running!” This may seem the thrifty thing to do – after all, sterilizers can be an expensive proposition for any sterile processing department – but it’s not always the right choice. Obsolescence has many hidden costs, but depending on the type, obsolescence can also yield benefits.

Types of obsolescence

Sterile processing departments face five forms of obsolescence: the most common being functional. Adam Hayes defined *functional obsolescence* as “the reduction of an object’s usefulness or desirability because of an outdated design feature that cannot be easily changed or updated.”¹ In the SPD, this translates to aging sterile processing equipment that can’t perform with the processing parameters necessary for today’s complex instrumentation or can’t keep up with the processing pace of the department.

Functional obsolescence also includes products and services that are no longer desirable because of increased cost of ownership, which can be defined as the cost to use and support that equipment. Older equipment typically needs more service, requires more repairs, and uses more utilities. It is less desirable to use this equipment as the overall cost of ownership increases. Sterilizers, washers, and other major reprocessing equipment can fall into this category, but surgical instruments can also become functionally obsolete.

Sometimes, manufacturers of a given model of equipment or instrument may discontinue the model along with related service and parts. This is a form of functional obsolescence since the unavailability of service and parts may prevent the use of the equipment.

Technological obsolescence occurs “when a product or service is no longer

needed or wanted even though it could still be in good working order.”² Systems with software features are often the victims of this type of obsolescence. Each new model brings new features, connectivity or processing capabilities preferred over the older model. Though the old models still function, they may sit idle. Washers, sterilizers, and ultrasonic cleaners can become technologically obsolete as newer models provide greater productivity or meet the needs of specialized instrumentation like robotic arms. With the current pace of technological development, advancements have outpaced the useful life of many types of equipment. Today, equipment using software or connecting with computer services are expected to be obsolete in as little as two years from initial introduction.

The simple definition for *legal obsolescence* is “a forced retirement of assets.”³ Equipment becomes obsolete due to the actions of an authority such as a local, state or governmental agency that dictates the discontinuation of use. For example, the SPD experiences legal obsolescence when FDA issues a recall or EPA decrees the discontinuation of a specific chemical, like ethylene oxide. Legal obsolescence can be immediate or may be phased out over several years.

Legal obsolescence can be direct, such as a recall, or indirect through pressures of regulation. For example, ethylene oxide has been around as a sterilant since the 1950s. However, in recent years changes to the hazards classifications of ethylene oxide have led to strict regulation of emissions, requirements for personnel monitoring, and restricted application in healthcare facilities. This increased regulation has raised the cost of ethylene oxide sterilizer operation and restricted its use, resulting in the discontinuation of ethylene oxide sterilization in many healthcare facilities.

Style/aesthetic obsolescence can be most easily defined as a product or service that is no longer “fashionable.” Clothing is not the only thing that goes out of style – equipment and instruments do too. How many



Photo courtesy STERIS Corporation

Favoring the use of a washer-disinfector with green and red status lights over a traditional washer-disinfector without lights is an example of a style/aesthetic obsolescence

instruments or specialty sets were hot commodities last year but are barely requested today? As procedures change and new instrumentation becomes available, doctors may prefer one type of instrument or set over another. This change in preference results in effectively obsoleted instruments and sets left unused in inventory.

Finally, we have *economic obsolescence*, which is “the loss of value resulting from external economic factors to an asset or group of assets.”⁴ Simply stated, economic obsolescence occurs when an asset is at an economic disadvantage due to events outside the control of the facility. Regulatory changes, scarcity of necessary resources to run the machine, and equipment valuation by the market are a few factors that create an economic disadvantage. All sterile processing equipment experiences economic obsolescence simply by getting old. Just like a car, the value of equipment goes down as the equipment gets older and the number of procedures or processing cycles it has experienced increases.

The benefits of replacing obsolete equipment

Obsolescence is often perceived as a negative event: expensive equipment that can’t perform the desired reprocessing parameters or is forced to retire through recall and regulation turns into a useless hunk of metal. However, if you look closer, there are meaningful benefits connected to obsolescence.

Productivity and recruitment gains

Obsolete equipment provides an opportunity to upgrade to newer models with increased efficiency and more useful features. Newer equipment may have faster processing times or meet the processing requirements for new instrumentation,

for example. Departments benefit from high efficiency systems that improve department workflow and productivity. Replacing obsolete equipment with newer models also allows facilities to expand their surgical or procedural options and attract physicians who use more modern instrumentation that could not be processed in the obsolete systems.

Utility and sustainability improvements

Obsolescence supplies an opportunity to improve department spend and reputation. Utilities such as water and electricity are part of every department’s budget. Newer equipment is typically designed to reduce utility usage. This can save departments thousands of dollars over the life span of the equipment. By reducing the use of resources, newer equipment can also help reduce the department’s carbon footprint and environmental impact.



Photo courtesy STERIS Corporation

Some newer cart washers offer reduced utility consumption and include specific cycles for instruments and rigid sterilization containers.

Reduced maintenance and repair costs

The financial benefits go beyond utility savings. Older equipment costs the department more to use. Higher service contract costs and increased repair costs coupled with more downtime results in higher department spend and possible lost surgical revenue. Downtime has the additional effect of reducing department productivity and causing backlogs and potential overtime expense. Comparing these costs to the cost of purchasing and

using the newer equipment can show a benefit from obsoleting the older equipment and investing in new equipment.

The subtle benefit of depreciation

Depreciation is a factor applied to capital purchases that shows the loss of value that an item incurs over time. A familiar example of depreciation occurs when you purchase a car. The resale value of the car steadily decreases each year you own the car, based on the car’s age, mileage, and condition. At some point in the future, the car will have negligible value. The difference between the purchase price and the market value is its depreciation.

Depreciation is calculated and used in accounting to represent the declining value of an individual’s or organization’s major assets over time, which is counted against its income. Applying depreciation will reduce the overall income reported, which in turn means less taxes paid.

However, there is a finite time during which depreciation can be used. The method of calculating depreciation is decided by the accounting team but is typically spaced over a specified useful lifetime for the equipment. Once the useful lifespan is reached the equipment can no longer be depreciated and will no longer count against the income. Obsoleting equipment and purchasing new systems creates a new opportunity for depreciation. Although this is the weakest benefit of obsolescence, it is a crucial consideration when discussing obsolescence planning for department equipment.

Develop an obsolescence plan

Obsolescence planning is a proactive approach that manages the timing and impact of equipment obsolescence. Ideally, the planning should start before any equipment is installed in the department, but this is unrealistic in most cases. For most departments, planning starts by assessing the current situation.

Assess what you currently have

Assessment identifies the current condition of existing equipment and the risk of this condition to the department. For example, newer equipment has less chance of breaking down or becoming technologically obsolete, so it has a low risk of obsolescence. However, older sterilizers, washers and other system models may no longer be manufactured and are more likely to be made obsolete by the manu-

Table 1: Questions to ask during an obsolescence risk assessment

Obsolescence Type	Questions to consider
Functional Obsolescence	<ul style="list-style-type: none"> • Has the cost of service, repairs, parts, and/or necessary consumables significantly increased? What is the annual cost? • Has a manufacturer discontinuation notice been issued for it or its necessary parts or consumables? • Does the equipment meet the needs of current or anticipated instrument processing parameters/instructions for use? • Does the equipment meet the productivity needs of the department?
Technological Obsolescence	<ul style="list-style-type: none"> • Can the equipment's software and hardware communicate with necessary devices? • Does the device meet the facility's carbon footprint or green initiatives? Is there a need to improve upon these? • Can the system meet the processing parameters necessary for new instrument models? • Is the equipment's software supported?
Legal Obsolescence	<ul style="list-style-type: none"> • Have legal or regulatory changes impacted the cost to operate the equipment? • Is there an increased safety risk when using the equipment? • Have components or consumables used in conjunction with the equipment been reclassified as hazardous? • Is there a recall notice for this device model? • Is there security risk if the equipment's software is no longer supported?
Style/Aesthetic Obsolescence	<ul style="list-style-type: none"> • How often is the equipment used? • Do technicians favor the use of other equipment?
Economic Obsolescence	<ul style="list-style-type: none"> • Has the equipment reached its depreciation limit?

facturer, which presents a high risk to the department.

When assessing equipment obsolescence risk, consider each type of obsolescence (see Table 1). Include an accounting department member as part of the risk assessment team because they can provide insight on the economic obsolescence risks associated with each piece of equipment. The combination of *impact to the department* and *probability of obsolescence* will help you determine low-risk and high-risk obsolescence conditions for each system.

Work with the depreciation schedule

Once the current equipment conditions have been assessed, it's time to determine the depreciation timeframe for all equipment. In general, it is better to maintain equipment that provides depreciation. Equipment that is obsolete for whatever reason can provide a depreciation advantage when it's replaced. When planning equipment replacements, try to optimize the depreciation schedule for the department.

Build a technology roadmap

The final consideration when planning for obsolescence is the technology road map. As mentioned earlier, today's rapid technological advances often outpace the useful life of equipment. To prepare for this, department supervisors should have a technology map that anticipates the department's needs for software, hardware, equipment connectivity, and higher productivity, each of which may require more advanced equipment. It's also important to keep track of manufacturers' newest useful features, capacities and capabilities, in case they can fulfill a need for your department.

Establish the plan

The planning process identifies solutions for high-risk and obsolete equipment. In the case of high-risk equipment, this may include sourcing consumables, repair organizations, and replacement parts. Manufacturers often supply a timeline for discontinuation of services and parts, so SPD managers should plan to stock up before the deadline. If it's not possible to obtain new equipment within this timeframe, buying key components and a large quantity of consumables near the deadline as a "last time buy" can help extend the use of the department's equipment until a new system is purchased.

Department managers should plan a replacement schedule that considers the risk assessment, equipment depreciation schedules, and technology plan for the department. This plan may cover many years and becomes the basis for justifying and budgeting for replacement equipment. As with any plan, situations can change and affect the plan, so the equipment assessment, depreciation schedules and technology road map should be maintained and updated periodically. The frequency depends on an individual department's situation. At a minimum, these planning elements should be reviewed prior to the facility's strategic and budgetary planning events. However, it's also important to review them whenever new equipment is installed, significant technology advancement occurs in the industry, and whenever new legal or regulatory requirements affect the status of equipment in the department.

Prepare for obsolescence

Sterile processing equipment will become obsolete – that is inevitable. However, the

negative impact to a sterile processing department and its surgical "clients" can be minimized if department leaders plan proactively to anticipate the risks, breakdowns, avoidable financial consequences, and potential downtime that obsolescence can cause. Planning for equipment replacement also has the potential to provide direct and indirect benefits to the department and the healthcare system's finances. In the end, it's well worth the effort. **HPN**

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CONTINUING EDUCATION TEST • JANUARY 2022

Can you afford to ignore obsolescence?

Circle the one correct answer:

1. Which is the most common type of obsolescence in sterile processing departments?
 - A. Functional obsolescence
 - B. Technological obsolescence
 - C. Style obsolescence
 - D. Economic obsolescence
2. A recall is a type of legal obsolescence.
 - A. True
 - B. False
3. Depreciation is a factor in
 - A. Technological obsolescence
 - B. Style obsolescence
 - C. Economic obsolescence
 - D. Depreciation obsolescence
4. How can replacing obsolete equipment help sterile processing departments save money?
 - A. New equipment can't process complex instruments
 - B. New equipment has lower productivity
 - C. New equipment does not meet regulatory needs
 - D. New equipment costs less to use and maintain
5. Which part of obsolescence planning looks at the probability that current equipment will become obsolete?
 - A. Risk assessment
 - B. Technology road map
 - C. Depreciation timeline
 - D. Process flow map
6. A technology road map tracks the depreciation timelines of department equipment.
 - A. True
 - B. False
7. Which consideration is part of assessing equipment for technological obsolescence?
 - A. Cost of service, repairs, parts, and consumables
 - B. Discontinuation notices received from manufacturers
 - C. Staff use preferences
 - D. Equipment's ability to communicate with other devices
8. Which of the following is the highest obsolescence risk?
 - A. Equipment installed within the last year
 - B. Equipment that has reached the end of depreciation
 - C. Equipment with high maintenance and repair cost
 - D. Equipment that is only used during peak operation times
9. How often should the obsolescence plan be reviewed?
 - A. Prior to strategic planning and budgeting
 - B. Every 2-5 years
 - C. Every 10 years
 - D. Never
10. Which event should trigger a review of the obsolescence plan?
 - A. New employee joins the team
 - B. The finance person retires
 - C. New equipment is installed
 - D. Consumables are changed



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