

This is an entry in the newly published *Encyclopedia of Operations Management – 2018 Edition* by Professor Arthur V. Hill. This book is available as an eBook from [Amazon Kindle](#) and in hardcopy format from www.ClamshellBeachPress.com.

5S – A *lean* methodology that helps organizations simplify, clean, and sustain a productive work environment.

Overview – The 5S methodology originated in Japan and is based on the simple idea that the foundation of a good production system is a clean and safe work environment. Translated from Japanese words that begin with the letter “S,” the closest English equivalents normally used are Sort, Set in order, Shine, Standardize, and Sustain.

The 5S model – The following list presents the five steps along with many variants.

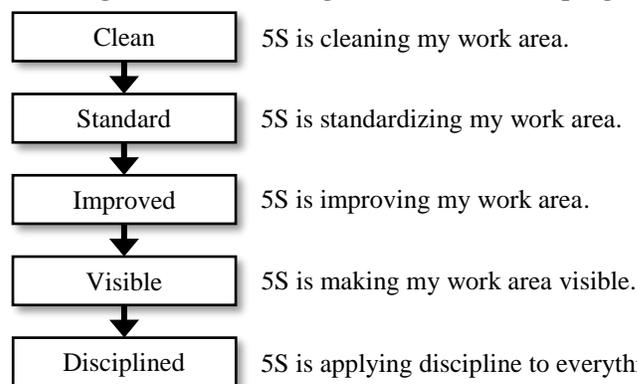
- *Sort (separate, scrap, sift)* – Separate the necessary from the unnecessary and get rid of the unnecessary.
- *Set in order (straighten, store, simplify)* – Organize the work area (*red tag, shadow board*, etc.) and put everything in its place.
- *Shine (scrub, sweep)* – Sweep, wash, clean, and shine everything around the work area.
- *Standardize* – Use standard methods to maintain the work area at a high level so it is easy to keep everything clean for a constant state of readiness.
- *Sustain (systematize, self-discipline)* – Ensure that all 5S policies are followed through the entire organization by means of *empowerment*, commitment, and accountability.

Some lean practitioners add a sixth “S” for Safety. They use this “S” to establish safety procedures in and around the process. However, most organizations include safety as a normal part of the *set in order* step.

Benefits – The benefits of a 5S program include reduced waste and improved *visibility* of problems, safety, morale, productivity, quality, maintenance, leadtimes, impression *on* customers, and sense of ownership of the workspace. More fundamentally, a 5S program can help the firm develop a new sense of discipline and order that carries over to all activities.

Five stages of understanding of the benefits of a 5S program – Awareness of the benefits of a 5S program goes through five stages, as depicted in the figure below.

Five stages of understanding the benefits of a 5S program



Source: Professor Arthur V. Hill

- *Stage 1: Clean* – People tend to assume initially that 5S is just cleaning up the work area. Cleaning a work area is a good practice, but this is only the beginning of 5S. (Some students joke that 5S is just “Mom telling me to clean my room.”)
- *Stage 2: Standard* – People understand that 5S is about making this clean work process more standard. This makes it easy to find things because everything has a place – and everything is in its place.

- *Stage 3: Improved* – People begin to understand that 5S is about continually improving how work is done. 5S challenges people to look for better ways to organize their work areas and to make their work simple, visible, error-proof, wasteless, and standard.
- *Stage 4: Visible* – People understand that 5S is about making work more visible so workers can focus on their work and so anything out of place “screams” for immediate attention. A visual work area provides cues that help workers and supervisors know the status of the system and identify if anything needs immediate attention.
- *Stage 5: Disciplined* – People wholeheartedly embrace the 5S disciplined mindset for how work is done and apply the discipline to everything they do.

Implementation – This author has collected and developed the following practical implementation guidelines for a 5S program:

- Take pictures before and after to document and encourage improvement.
- Practice the old slogan, “A place for everything and everything in its place.”
- Place tools and instruction manuals close to the point of use.
- Design storage areas with a wide entrance and a shallow depth.
- Lay out the storage area along the wall to save space.
- Place items where they are easy to see and access.
- Store similar items together and different items in separate rows.
- Do not stack items together. Use racks or shelves when possible.
- Use small bins to organize small items.
- Use color for quickly identifying items.
- Clearly label items and storage areas to improve visibility.
- Use see-through/transparent covers and doors for visibility.
- Remove unnecessary doors, walls, and other barriers to visibility, movement, and travel.
- Use carts to organize, move, and store tools, jigs, and measuring devices.

Criticisms – In this author’s opinion, set in order should be after shine so cleaning can be done without anything in the way. In this author’s experience, 5S is worth doing to increase visibility and discipline. However, few firms can identify any quantifiable economic benefits of a 5S program; as a result, many leaders start their lean journey with a focus on activities that have more quantifiable returns.

See [8 wastes](#), [broken windows theory](#), [empowerment](#), [facility layout](#), [kaizen](#), [lean thinking](#), [personal operations management](#), [point of use](#), [red tag](#), [shadow board](#), [standardized work](#), [Total Productive Maintenance \(TPM\)](#), [visibility](#), [visual control](#).