WORKFORCE TECHNOLOGY SOLUTIONS PLAYBOOK SERIES:
CLEANING ROBOTICS

Solution Purpose: Improve cleaning efficiency and effectiveness
- Reduce time and labor for cleaning
- Enhancing infection control practices
- Increase frequency of cleaning with minimal employee hours

Budget:
- Purchasing a robot will cost between $25,000-$50,000. This includes freight, delivery, training, and installation.
- Leasing a robot will cost $1,000- $1,500 per month. Some leases offer affordable buy-out options after a certain period.

Specific pricing for each vendor is not included in this playbook because the fees structures vary significantly. Contact information for each solution is included in the matrix to access accurate pricing for your operations.

LeadingAge® MN
FOUNDATION

VENDOR MATRIX

	Pudu CC 1	Cenobot SP 50	WHIZ
Robot Features			
Training Included in Set Up Cost?	✔	✔	✔
Active Presence in MN?	✔	✔	✔
Cleaning Functions	Sweeping, Vacuuming, Scrubbing, Mopping	Sweeping, Vacuuming	Sweeping, Vacuuming
Physical Dimensions	26.1 x 22.36 x 26.85 inches	33.4 x 23 x 41 inches	18.6 x 17.9 x 25.7
Ideal Space to Deploy Robot	Hallways, dining areas, entryways, conference rooms and ballrooms	Large to very large areas (up to 160,000 square feet in regular clean mode)	12,000 square feet per battery (2 batteries included)
Battery Life (from full charge)	4-8 hours	8 hours	3 hours
Battery Charging Time	3 hours	4 hours	4 hours
Elevator Navigation?	X Has built-in capability, waiting for elevator company integration	X	X
Door Navigation?	X	X	X
Key Differentiator (*Provided By Solution Representative*)	Offers unique edge cleaning capability and combines vacuuming and mopping in a single unit and can work cooperatively with multiple units.	Regular/Spot Cleaning. Unit "roams" around facility and "finds" dirt and debris. Verifies cleanliness and goes over area until clean. Up to 20,000 square feet/hour up to 13 hours.	Cellular connectivity instead of the Internet makes this unit usable straight out of the box. Also makes programming and use extremely easy.
Vendor/Contact	Girard Business Solutions; Nate Girard, 952-890-4827, nateg@girardsinc.com		
Implementation Support (*Provided By Solution Representative*)	Girard Business Solutions (GBS) maps, programs, tests, and trains operators onsite during installation. GBS offers extended warranty/service coverage as well as on-call service remotely and/or onsite.		

Key Personnel for Successful Implementation

Project Lead(s): (responsible for internal coordination and vendor communication):
Personnel to consider for Project Lead role: Plant/maintenance director, housekeeping director/supervisor, infection control manager

Note: Recommend co-leads to maintain continuity if change in employment, illness, etc.

End-users: (Individuals and groups who will interact with the robot)
- Maintenance and housekeeping team
- Floor supervisors (all shifts)
- Residents and resident families
- Dietary director/supervisor (if robot will be used to clean dining areas)

Vendor Selection Team: (Key stakeholders who should be part of the decision-making process because they have a vested interest or expertise)
- Project Lead
- Administration
- IT/Tech support
- Plant maintenance
- Dietary director/supervisor (if robot will be used to clean dining areas)
- End-user representative(s)

Team/Staff to Support Product Launch: (Key stakeholders who will play a vital role with training, troubleshooting and will be ambassadors of the changes needed)
- Project Lead
- Operations/administration/executive director
- Dietary director/supervisor (if robot will be used to clean dining areas)
- Staff education/training role
- IT/Tech support
- Plant maintenance/housekeeping supervisor/director
- End-user representative

Follow-up Supporting Coalition Team: (Individuals who play a key role with reinforcing the rollout success because of their job description and/or leadership responsibilities)
- Plant maintenance/housekeeping supervisor/director
- Operations/administration/executive director

Best-Practice Implementation

Key software integration/compatibility: Cleaning robots do not require integration with other enterprise systems. However, considerations can be made for the following when selecting a solution to improve and expand capabilities:
- Workorder and housekeeping task tracking systems
- Automatic door and elevator compatibilities (future integrations are in the works for some models)

Infrastructure/equipment requirements:
- Standard 110v/120v outlet for charging. No special electrical accommodations are required.
- Wi-Fi is not required for the robots to clean. However, strong Wi-Fi is required for the following:
    * Initial setup
    * Software updates (periodically completed during downtime for new features or navigation improvements)
    * Remote tech support
    * Usage reporting
- Some robots require a cellular connection to operate. This should be considered when investing in the right model for your location.

Expected timelines after vender is selected: *Approximately 6 months*
- Two-four weeks for robot order and delivery
- Two-three weeks for setup, community mapping
- Three-four months for workflow development
- Two weeks of advanced oversight and monitoring after roll-out to ensure success
- Four weeks follow-up and check-in touchpoints

Location Needs: Dedicated parking location for charging and storage while not in use. Refer to attached comparison chart for robot dimensions.

Policies/Procedures impacted: It is recommended that the entire cleaning process be redesigned to take full advantage of the robot capabilities.
- Housekeeping procedures/job descriptions
- Orientation/onboarding – embed training and new processes into new employee orientation at time of launch
    * Housekeeping/Maintenance employees – active users
    * All employees who may need to relocate or restart the robot

What to expect post-implementation:
- Reduction of employee time spent vacuuming/scrubbing
- Increased cleanliness and infection control

Tips:
- Develop new job descriptions that reflect a new workflow and cleaning processes
  - * How to start the robot for its cleaning assignment(s)
  - * How to maintain the robot including proper cleaning, maintaining, charging and storage
- The robot does not directly replace an employee but can reduce the overall need for staff hours dedicated to cleaning. It provides a supplement to the cleaning processes and makes the employees' jobs easier. It can also reduce risk of injury related to the manual labor of vacuuming and scrubbing floors.
- During training, be sure all employee end-users and leadership team learn how to reset/reboot or relocate the robot. This can be required occasionally, can be completed within minutes and is a simple process. Include this training in new employee orientation for all employees who may interact with the robot during scheduled cleaning.
- Though capability to navigate doors and elevators is possible for some models, it isn't widely available and will depend on elevator systems and automated door compatibility. These features may also add cost to the product.
- Offer a "meet the robot" opportunity for residents and their families. Provide an introduction, demo of the robot in action and an opportunity to help name the robot. This generates energy and support, allows for questions and answers and sets the stage for requesting patience from the community as the new technology is introduced to the cleaning processes.

What's next for this technology?
- Robotics will continue to advance with capabilities to navigate doors, elevators, and more complex environments.
- UV is a reliable and effective way to disinfect equipment and rooms. There are UV robot solutions that are autonomous and thorough for disinfecting resident care areas and resident rooms. These robots typically do not clean debris by vacuuming or scrubbing but only disinfect surfaces. They are highly effective for managing infection control for easily transmitted illnesses such as C. diff. These solutions are significantly more expensive than the robots included in this playbook. If interested in UV robot solutions, please contact LeadingAge Minnesota to learn more.

Playbook development and disclaimer:
This playbook was developed to assist care providers and operators in the understanding of robotic cleaning solutions but cannot include all products that may be available. Products mentioned in this playbook serve as illustrative examples and were included because of the following:
- Recommendations from LeadingAge members
- Information gathering from solution providers
- Product demos and Q&A meetings with solution providers
- Information gathered directly from active users of cleaning robots
- Provider case studies

Please use this playbook as a general guide in understanding functionalities and capabilities of these solutions as well as a means to implement your chosen solution more successfully. These solutions have not been tested or verified by LeadingAge Minnesota. Providers are strongly advised to verify functionalities of vendor solutions prior to final selection through demonstrations, site visits, reference checking and other due diligence.

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