Extension
UNIVERSITY OF WISCONSIN–MADISON

Ag Tech—Start with the Right Questions

Adopting new technology is a significant investment that can be highly profitable if done well—or costly if not. Understanding the factors that influence the outcome and gathering the right information is crucial. This tool helps you assess your awareness and knowledge of the issues affecting successful adoption.

Instructions:

Read each item and decide on a score using the key below. Enter that score in the shaded cell to the far right of the table and then average the scores by section. When you're done, look at the 'Adoption Preparation Wheel' page to see a map. Any item with a score of 3 or less might need more attention.

How much I know, thought about, planned for, and feel confident that I have information needed to make a good management decision in these areas:	NONE	LIMITED	SOME	MODERATE	SIGNIFICANT
Enter a Score of:	1	2	3	4	5
Business Goals					**Score: 1 - 5**
a. What are your business and family goals?					
b. How does this technology fit into your long-term strategy?					
c. What is the primary purpose for making this change?					
d. What tasks or bottlenecks could this technology improve?					
e. How could future technology impact your investment?					
f. What is the technology's lifespan?					
g. What is the plan for updates and obsolescence?					
			Average Score		
Cost-Benefit					**Score: 1 - 5**
a. How will the technology affect production?					
b. How much does it cost to buy and set up the equipment and infrastructure?					
c. How will the change impact operating costs (feed, labor, repair & maintenance, veterinary, utilities, insurance, etc.)?					
d. What is the useful life before replacement?					
e. How much does it cost to keep the equipment running and maintained?					
f. How quickly do you expect to see a return on investment (ROI)?					
g. What strategies can you use to manage surprise costs?					
h. How does ROI change with productivity improvements, cost reductions, and better resource management?					
			Average Score		
Infrastructure					**Score: 1 - 5**
a. Is the technology compatible with your current infrastructure and systems, or will you need to make changes to your setup?					
b. How will input needs (chemicals, feed, seed, sand, etc.) change?					
c. What impact will there be on infrastructure like ventilation, plumbing, electrical, water, and manure systems?					

d. How much energy does the technology use and how will your energy needs change (gas, electricity, propane, etc.)?	
e. What backups should be in place in case of hardware failures or data breaches?	
Average Score	
Connectivity	**Score: 1 - 5**
a. Do internet connections meet the technology's network requirements?	
b. How does the tech perform with unstable connectivity?	
c. How do you feel about being constantly connected to the technology through notifications and alarms?	
d. How does it handle and secure sensitive farm data?	
e. What measures are in place to prevent unauthorized access?	
f. Does the technology work well with your existing farm management systems and software?	
g. Will you need new software or subscriptions?	
h. Do you have a plan for managing and using the data or will you need to hire someone to help?	
Average Score	
Labor/Training	**Score: 1 - 5**
a. How easy for people to learn the new system, no matter their technical skills?	
b. How much training will your staff need to use and maintain the equipment?	
c. What additional safety training is required?	
d. How will the changes affect your total payroll costs?	
e. How much time and labor will the technology save?	
f. Are there user groups you can join?	
g. Do you or your staff like and have the capacity to solve problems?	
Average Score	
Support	**Score: 1 - 5**
a. How well-known and trusted is the supplier or manufacturer?	
b. What extra agreements or subscriptions are required?	
c. Have you checked reviews or sought testimonials from other users?	
d. What maintenance and support services does the manufacturer offer?	
e. How often will maintenance be needed?	
f. How long will maintenance take, and how will it affect daily operations?	
g. What is the likelihood of reliable and timely support for technical issues?	
Average Score	
Adaptability	**Score: 1 - 5**
a. What are the short-term effects of switching to the new technology, and how long will they last?	
b. Can the technology grow with your farm's operations?	
c. iii. How will the technology adapt if your business size or structure changes?	

d. How well can the technology adjust to changes in crop patterns or livestock management?	
e. How does the technology perform in different weather conditions, and can it handle extreme weather?	
f. How does the equipment adapt to unexpected changes in the farming environment?	
g. What are the backup plans if bad weather or other factors affects the technology's performance?	
Average Score	
Stakeholder Mgt	**Score: 1 - 5**
a. What is the strategy for communicating changes to and integrating feedback from employees and stakeholders?	
b. What is the environmental impact of the new technology and does it match your sustainability goals?	
c. What are other farmers, consultants, agricultural associations, and University research programs saying about the new technology?	
d. What approvals or inspections do you need from regulatory bodies or government agencies for using this new technology?	
e. Does the process for implementing the new technology comply with all state and federal laws and regulations?	
f. How will the new technology impact any licenses or certifications?	
g. If there is a written contract, are both your and the supplier/service provider's obligations clear? How will the 'fine print' impact your use of the new technology and the supplier's use of your farm data?	
h. How will the new technology impact your insurance coverage? Will it impact your coverage types, levels, and premiums?	
Average Score	
Production Have you considered what changes in management practices, protocols, processes, and procedures will be necessary with the implementation of the new technology related to:	**Score: 1 - 5**
a. Feeding and nutrition (feed cost, nutritionist skills)	
b. Milk production and components (butterfat, protein)	
c. Milk quality and SCC levels (testing SCC)	
d. Reproduction (activity, breeding protocols)	
e. Hoof health (footbaths)	
f. Bedding management (bedding type, protocols)	
g. Herd health (identification, monitoring sick cows, administration of medications)	
h. Data management (alerts)	
i. Milk disposal (non-saleable milk for calves)	
Average Score	

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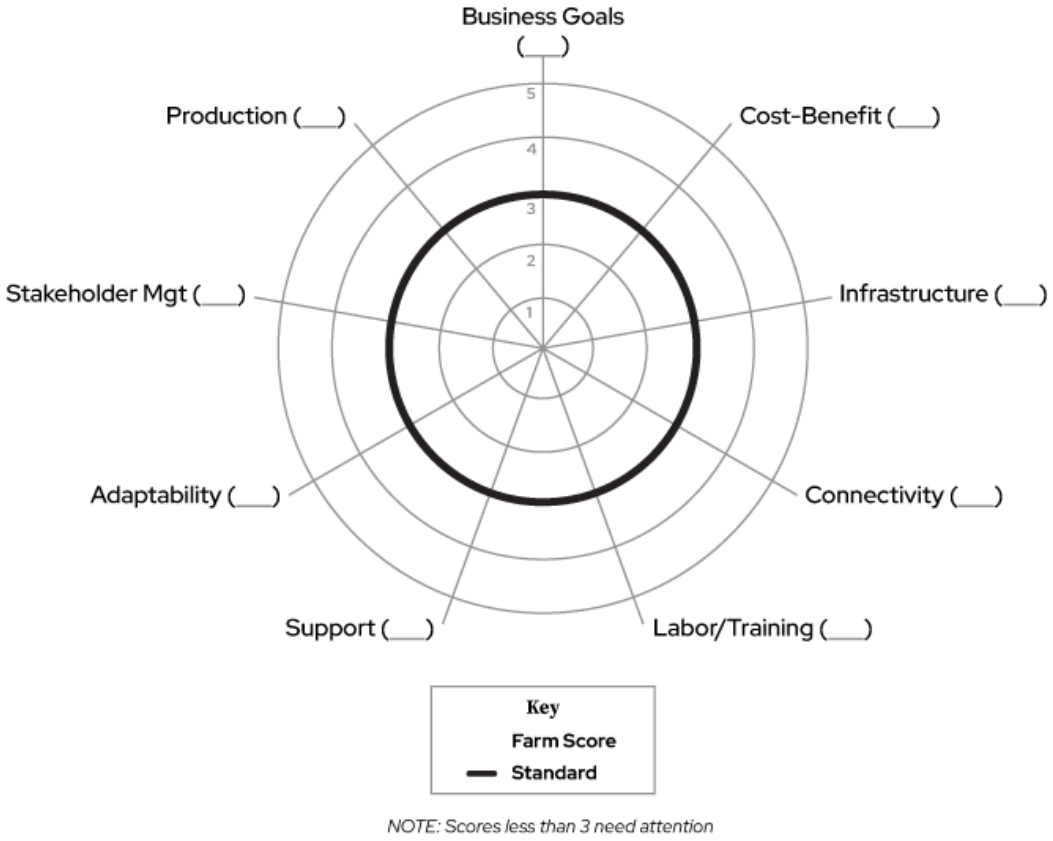
Adoption Preparation Wheel

Instructions

1. Write down the average score for each section below on the corresponding line (___).
2. On the wheel, mark the averages to see which areas need more attention and which areas you are well-prepared for. Put a dot under each section that matches the average score. Then, connect the dots to see the shape of your wheel.
3. After marking all your scores on the map, connect the dots to see the shape of your preparation wheel. Any dots on or inside the bold line show areas that might need more attention.



NOTE: Scores less than 3 need attention

Tool created by Kevin Bernhardt, Farm Management Specialist with the UW-Madison Division of Extension. Survey questionnaire created by the UW-Madison Division of Extension team (Stephanie Plaster, John Shutske, Angie Ulness, Jackie McCarville, Carolina Pinzon, Leonard Polzin, Kelly Wilfert, Nesli Akdeniz Onuki, and Kevin Bernhardt).

Explore more tools and learn more about Ag Technology and Automatic Milking Systems at https://farms.extension.wisc.edu/technology

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Ag Tech—Start with the Right Questions
Reflection Worksheet

This tool, based on real farm interviews, helps you assess how confident you are that you have the information needed to make a good decision about new technology for your operation. Use the following questions to find out what more information you need and what steps to take next.

1. Which areas were rated a 3 or lower? Which one was the lowest?

2. What's stopping you from having all the information you need?

3. List the ten pieces of information you need or questions you have.

1.	6.
2.	7.
3.	8.
4.	9.
5.	10.

4. What resources or people could help you get more information?

Ready to move forward? Answering these two questions can set your plan in action.

5. What are the one or two most important things you should explore first?

6. When will you get the information by and who is responsible for getting it?