



# CHALLENGES OF IMPLEMENTING AI

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# Implementation Costs

The costs broadly fall under 3 categories:

1. AI tools and the cost of purchasing/implementing them.
2. Cost of database infrastructure
3. Having the right internal resources

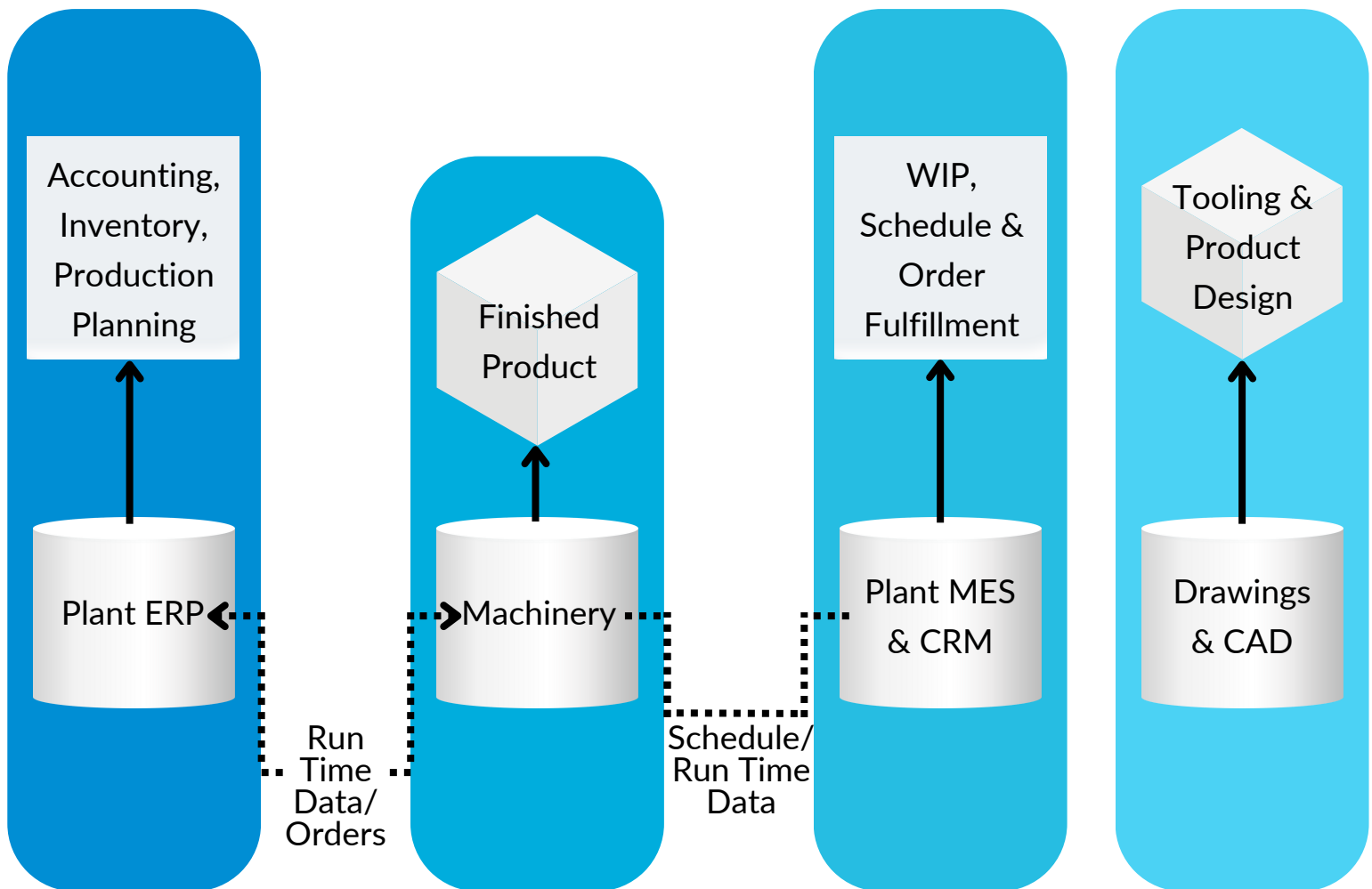
The largest cost drivers are points 2 and 3 because it puts in place some of the foundational work tools that AI lives on. One obvious other factor is how much you have already invested in automation. More modern equipment and software provide fewer barriers to the data, and often have some of the data AI tools you need. If you have a plant with older machinery, you will need to be strategic and pick your biggest pain points and work with a vendor you trust to add sensor diagnostics to it. Start by digitizing and maintaining good maintenance records and using software or digital systems for other plant operations. These will be critical steps to take. What is most important is to work with your suppliers of both machinery and ERP software to ensure you have open and well-documented access to the data they store.

The cost of developing and implementing AI itself could be between \$15,000 and \$100,000 depending on what you are trying to do. When the payoff is close to a 30% increase in total revenue - potentially for years to come - the value is clear.

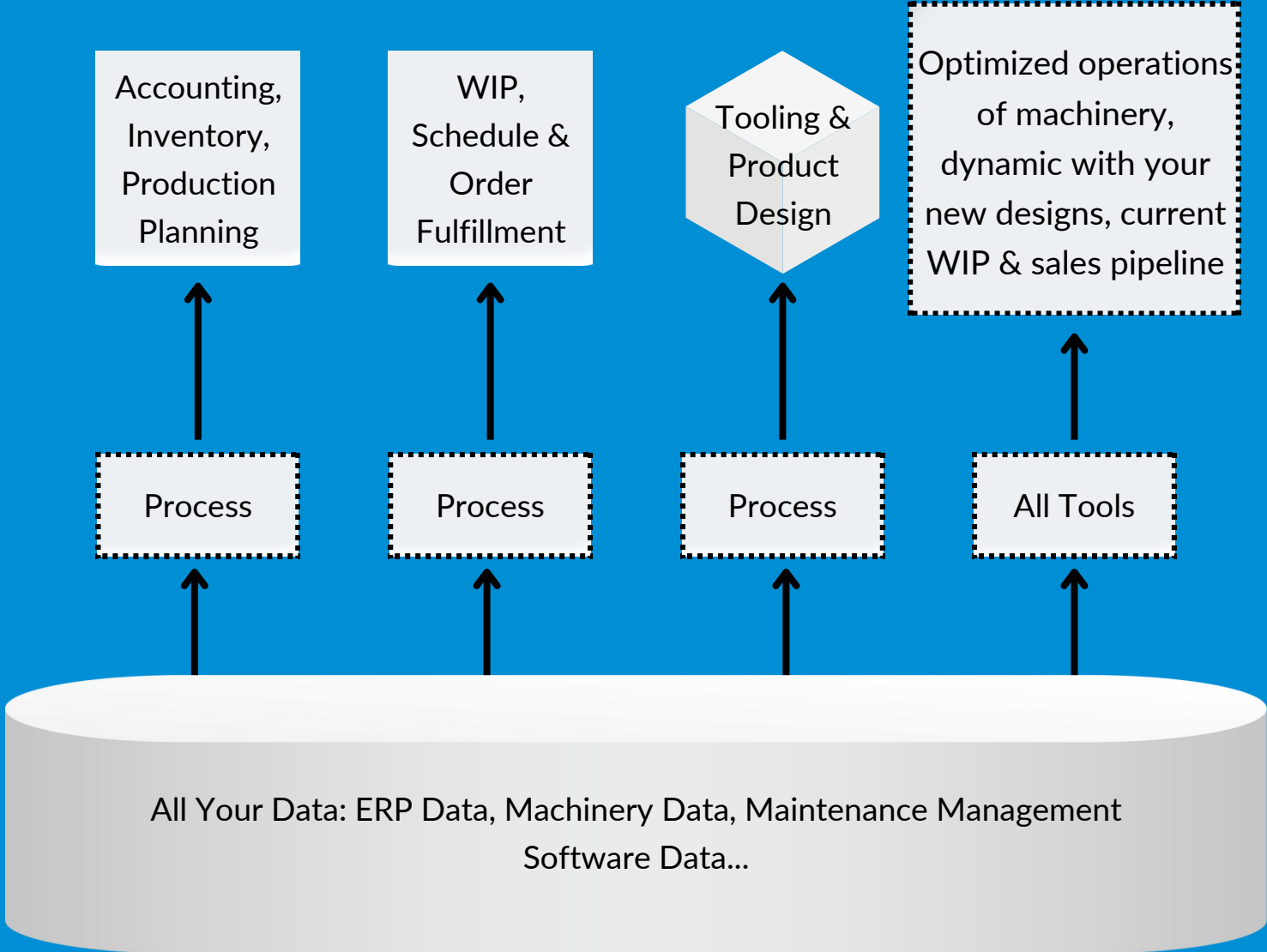
In short, the machinery, software and people will have to change to make AI a useful reality from where it is today in most box plants. But taking this route offers the opportunity for systematic growth based on operating at a level we have not been able to before.

# Disconnected Systems and Stranded Data (Data silos)

Most box plants have a data system that looks like the diagram below:



You do not need to completely collapse these different databases and invest a lot of money to do that, but you do have to build bridges between them. With the right bridges the box plant of the future will have a data architecture closer to this figure below:



# Data Management and Security

This is an area you can do a whole other article on. The sharp focus here would be around the sheer number of AI apps and add-ons you can access today. By some estimates, AI apps generated a cumulative \$2.5 billion last year and are expected to grow 38% year-over-year. This means our employees and organizations will be using AI apps for personal and work in the coming years. This is exciting, but also means more cyber threats as more tools will have access to potentially sensitive data. Not all apps are equal or safe and it will become imperative to regulate their use in the context of company data and any intellectual property.

# Takeaways

1. Educate your workforce on the tools they can and cannot use and what information they should or should not put in open applications. A good rule of thumb is if the tool is free, the security might not be at the standards a company needs.
2. Start actively sourcing and adding these work tools strategically. It is easy to say you cannot use Google Bard but can use ChatGPT Enterprise, if given access by the company. Almost every enterprise solution comes with security measures that protect your data from being farmed out to the internet.
3. The advantages of AI come from the clean and easy access to your data, so keeping your credentials safe and using multi-factor authentication is vitally important.

NOTE: It is also important to recognize that this is not an exhaustive list of cybersecurity risks and is meant to be broad and educational. For your own care please involve professionals because the risk and exposure are real and can be crippling to a company's infrastructure.

# Conclusion

There is a lot of positive momentum in the R&D world around AI, especially in social media where it has had an enormous impact for almost a decade. You may wonder if this is too new to be valuable to have an impact in your business. With technology in general, the pace of adoption in manufacturing has been slow. For example, we have had WI-FI for many years but often do not use wireless technology to connect our machines even today.

One key factor is that the rate of development in Artificial Intelligence is every 6 months, not years. Unlike new technology in the past, development is happening in private and commercial spaces rather than in academic and research institutions. This means we will have access to this technology in the form of new products and tools faster than previous technologies.

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For these reasons it's not too early to educate your workforce and start planning for how your organizations will work with AI in the future.

# Acknowledgements

Artificial Intelligence (AI) is a powerful, emerging technology that will have a major impact on the operations of AICC members and their customers. To educate members on AI, AICC formed the Artificial Intelligence Sub-Committee that is comprised of the following members: Greg Tucker, Bay-Cities; Guy Ockerlund, OxBox; Jeff Putt, DeLine Box & Display; and Gokul Gopakumar, SUN Automation. AICC thanks these members for sharing their time, their experiences, and their ideas with their fellow AICC members.

All AICC products begin with our members. The AI Primer from AICC is a series of “whitepapers” on artificial intelligence, that have been (and will be) written by AICC members from the AI sub-committee, other AICC members, and subject matter experts. We thank each of them for their contribution to this educational tool.

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