



**ANCILTAYLOR**  
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# ***Dredge Technology Needs for Large-Scale Beneficial Use Projects***

**Presented to the Western Dredging Association**

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**by Ancil Taylor**



# Good

*Dredge  
Technology  
benefits all!!!*



**While TECHNOLOGY development within our industry certainly benefits Beneficial Use Projects, the truth is, it benefits virtually every dimension and aspect of our industry.**



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# *Benefits of Effective Implementation of Dredge Technology*

- Increased efficiency,
  - Increase production and/or,
  - Lower operating cost.
- Industry benefits with greater utilization of our services.
- Nation and tax-payers win with increased benefits of industry services, “more bang for the buck”.
- Beneficial use options increase with their increase in efficacy.



*Detriments of  
Effective  
Implementation of  
Dredge Technology*

**None**



# Increasing Efficiency in Unit Cost

- **For the most part, we are a commodity industry.**
  - Our product usually involves the transfer of dredged material from one location to another and typically our clients make that choice for a contractor based on the price for delivery of that service.
- **Submitting the right price can be influenced by our cost for that service.**
  - although it should be based upon what the market will bare which we'll get into a little later.



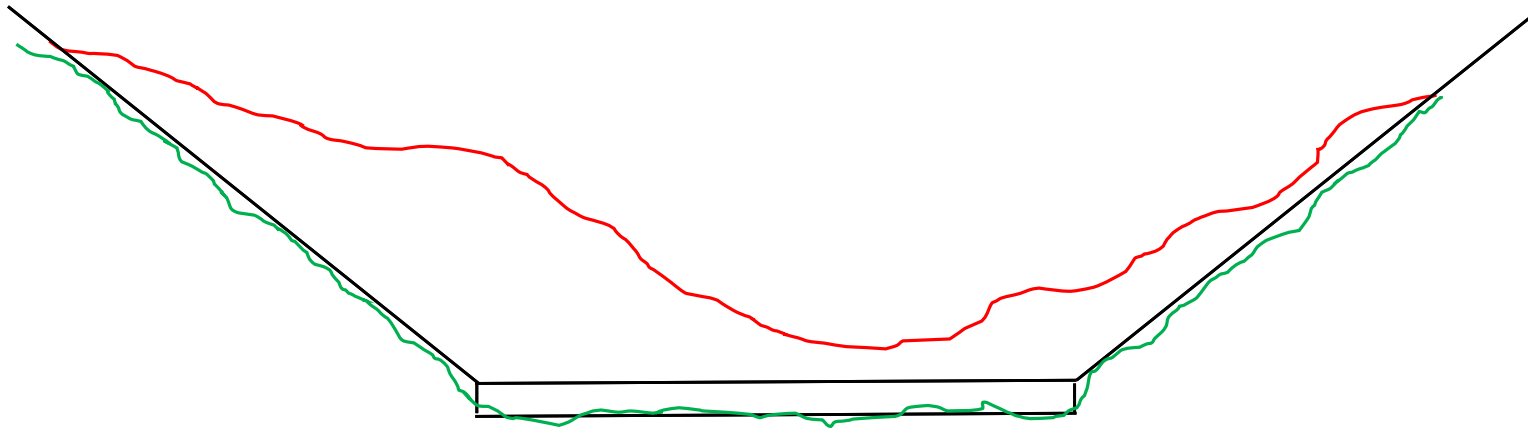
## Increasing Efficiency in Unit Cost (cont'd)



- Decreasing unit cost
  - accomplished primarily through increasing production
  - incremental improvements to operating cost can also improve efficiency but
    - real meaningful options are often limited in our industry due to our personnel, equipment and corporate structure.



# *Increased efficiency through production improvements.*



- **Better Dredge Positioning**
  - **Dredge and remove only what needs to be removed.**



# *Increased efficiency through production improvements.*

- **Fully Automated Dredging on hydraulic dredges:**



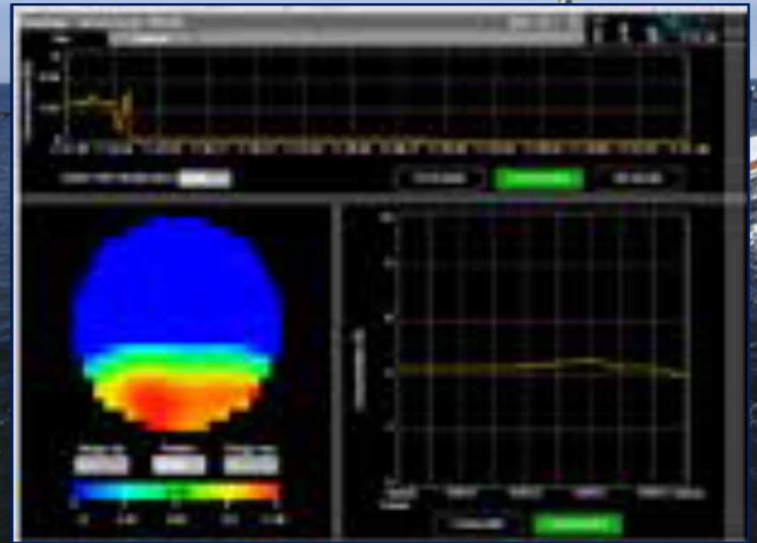
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# *Increased efficiency through production improvements.*

- Example of automation components:
  - Flow meters and simple flow controls were first used in the 1980's on dredges in the U.S.
  - Subsequent enhancements to simple flow-control with density meter input continued to improve fuel efficiency and productivity over the next few years.
    - Including automatically suggested optimal flow rate or velocity based on type of material.



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# *Increased efficiency through production improvements.*

- Example of automation components:
  - Fully Automated Swing Control
  - First utilized in the U.S. in 1984
  - Production monitoring revealed normal differences in operators.
  - The only advantage needed to justify the capital expense would simply equalize performance. Additional production over the best performing operator would be “lagniappe”.

Study of Economic Feasibility of Full Automation			
	Production %	Annual Revenue Manual Control	Annual Revenue Auto Control
Leverman A	100%	\$14,591,440	\$14,591,440
Leverman B	83%	\$12,110,895	\$14,591,440
Leverman C	74%	\$10,797,665	\$14,591,440
<b>Total</b>	257%	\$37,500,000	\$43,774,319
Total Revenue		\$37,500,000	
Operating Days		285	
Average Rev / Day		\$131,579	\$153,594
<b>Annual Difference w/Auto</b>			<b>&gt; 6,300,000</b>



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# *Increased efficiency through production improvements.*

## **DB Avalon**

Credit: Curtin Maritime

- **Fully Automated Dredging on mechanical dredges:**



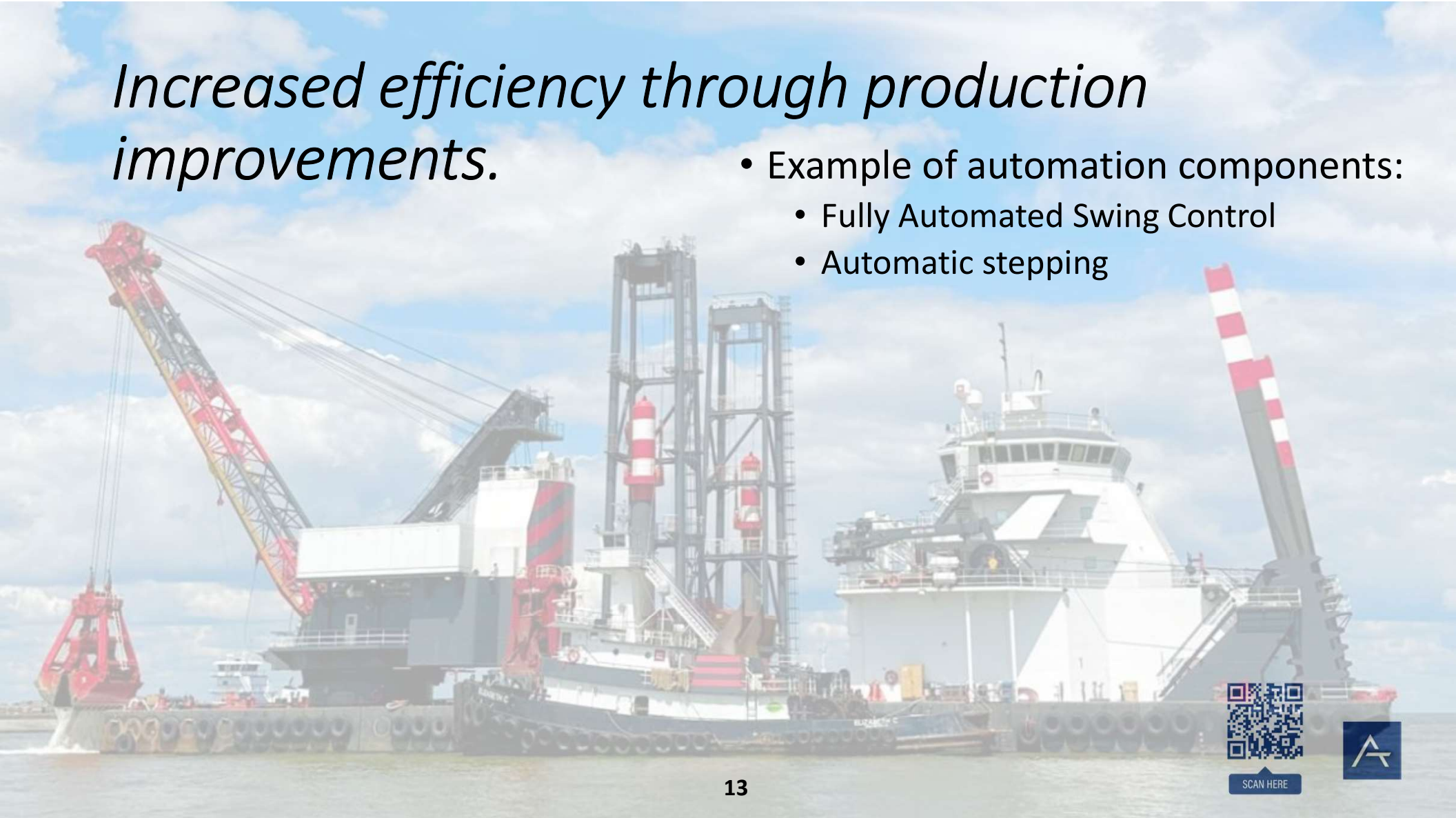
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# *Increased efficiency through production improvements.*

- Example of automation components:
  - Fully Automated Swing Control
  - Automatic stepping

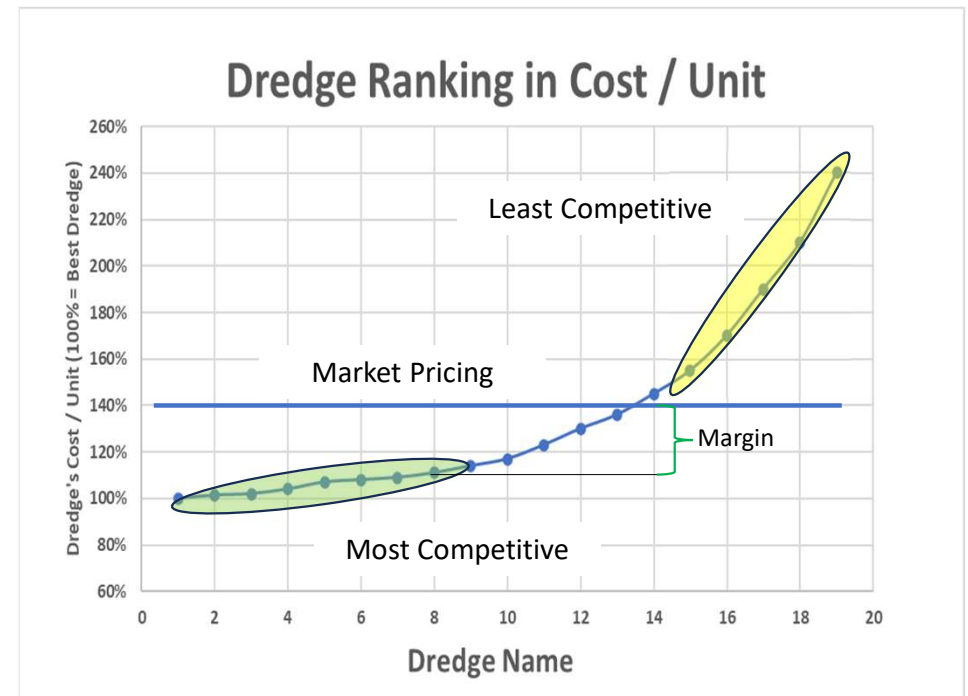


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# *Increasing efficiency increases utilization*

- There is always a list of dredges that continually tend to rank from the best to the least competitive in the market.
- The best ones usually enjoy virtually full utilization and the higher margins. This combination provides an incredible return on investment.
- Adding more dredges or in other words, flattening this line creates an increase in viable competitors to the market.



**Where is your dredge in this ranking?**

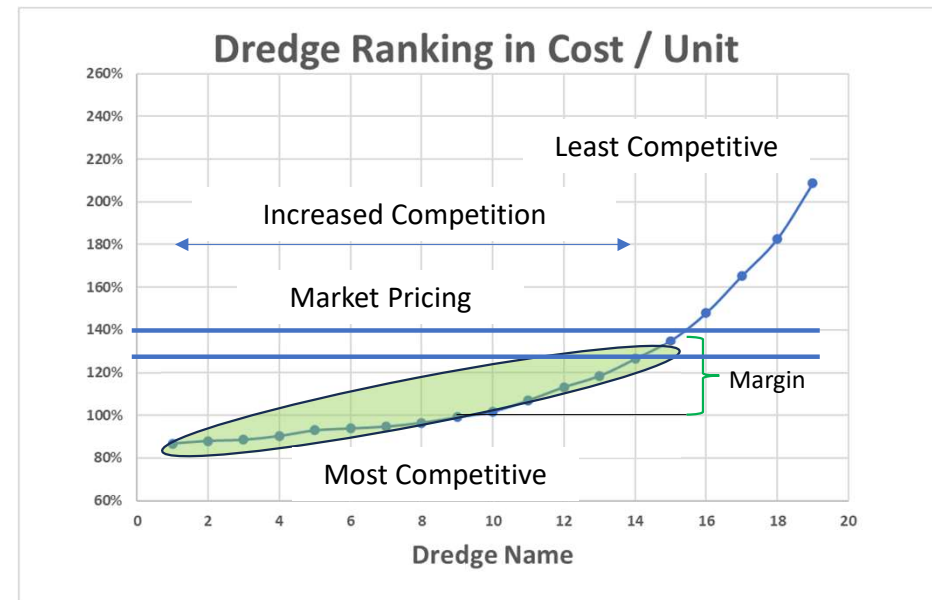


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# *Increasing efficiency increases utilization*

- Adding more dredges or in other words, flattening this line creates an increase in viable competitors to the market.
- Increased viable competition has proven results in the marketplace.



## *Increasing competition reduces cost to taxpayers and users.*

- With a drop in market pricing, projects that may have been on the cusp or border or economic feasibility begin to be deemed feasible and will move forward:
  - Navigation dredging, public and private,
  - Coastal restoration, public and private,
  - Beneficial Use Sites once believed to be economically unfeasible begin to fall into the feasible category.





## *All Dredgers will enjoy our Customers' Increased Demand*

- Dredgers appreciate projects that are difficult, require longer pipelines and boosters. They've made investments in their supplemental fleet and want to encourage their use on more challenging projects.



**Bring on the Beneficial Use Sites, the challenging Projects, once thought to be impractical. Industry is preparing itself!!**



# *Increased Dredge Productivity and Efficiency*



- Spawns innovation in placement area strategy
- Accommodating the increased productivity may require multiple points of discharge, manifold pipelines feeding numerous cells simultaneously.



# Questions



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