



QUARRY ACADEMY

Improving Processes. Instilling Expertise.



Current State and Future State What's on our Customer's Mind



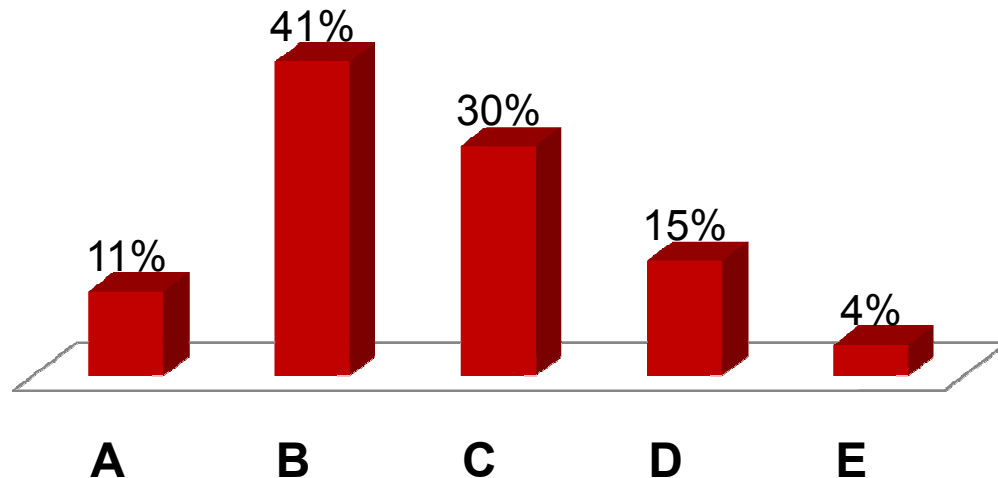
Improving Processes. Instilling Expertise.



Current State Questions

What year in the future will the price of diesel hit the \$10 / gal. mark?

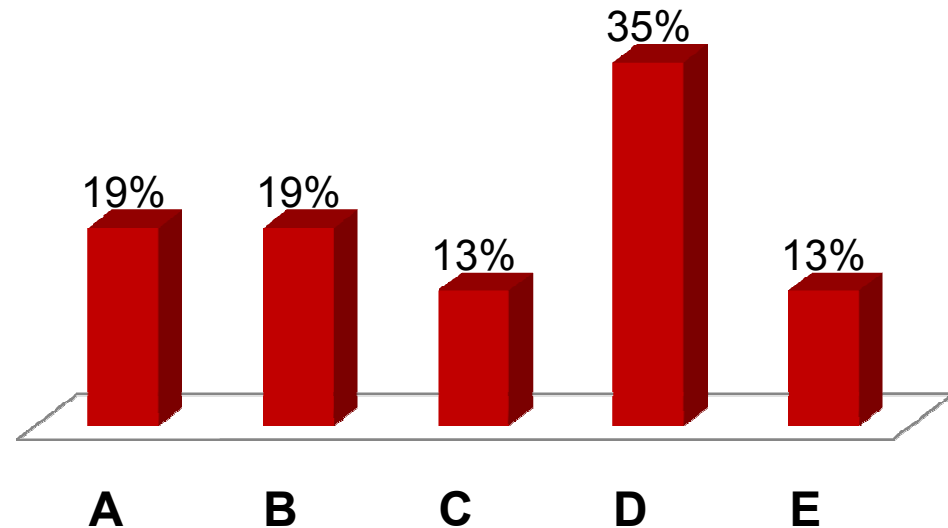
- A. 2012**
- B. 2015**
- C. 2020**
- D. 2030**
- E. 2040**



Current State Questions

When it comes to plant operations, our company's biggest challenge is mine planning, site permitting, and / or the mine design process!

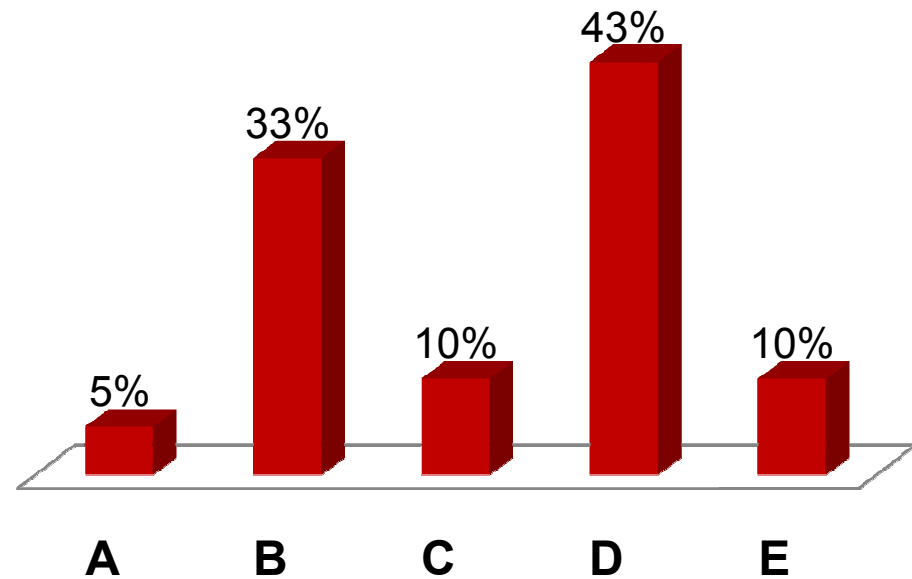
- A. Strongly disagree
- B. Don't agree
- C. No opinion
- D. Agree
- E. Strongly agree



Current State Questions

Crushing is a major production challenge that we have!

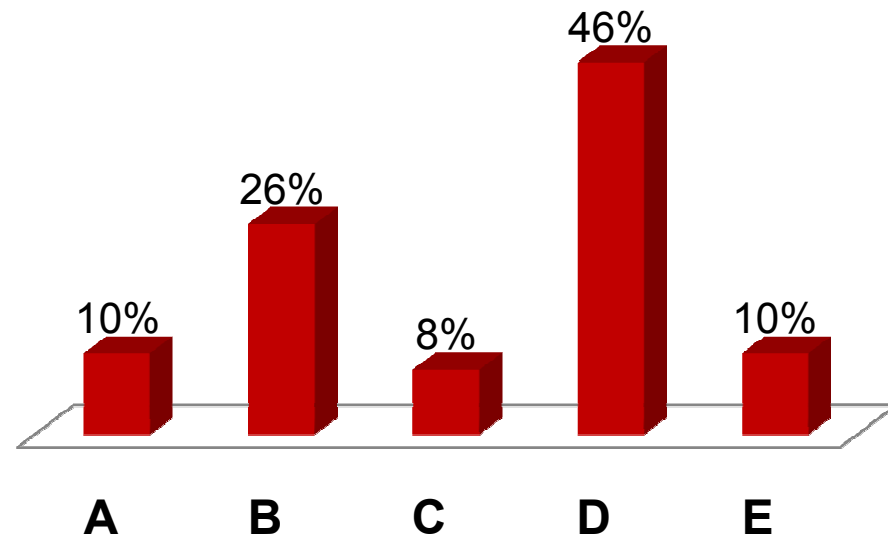
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Current State Questions

Conveyance and / or haulage offers us the most productivity or cost savings opportunity than any other operational area!

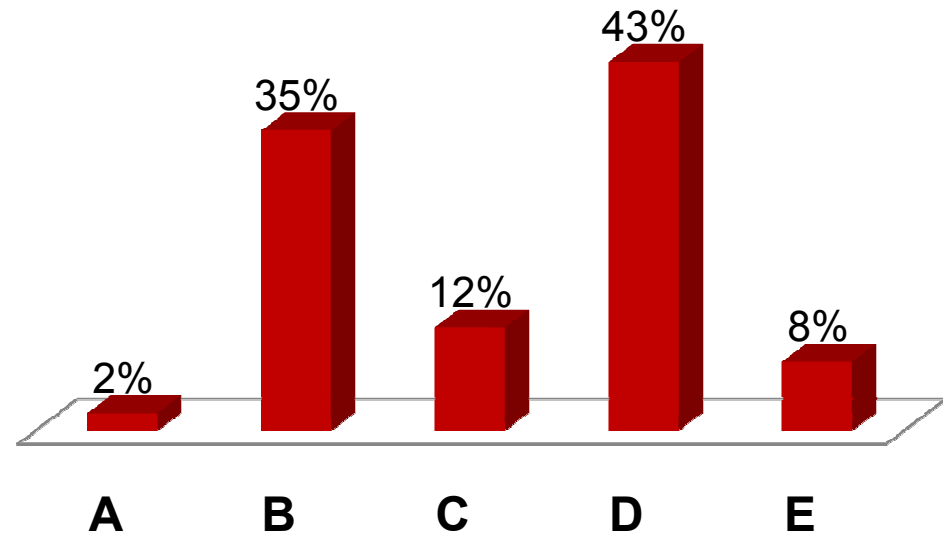
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Current State Questions

Screening is our biggest operational challenge!

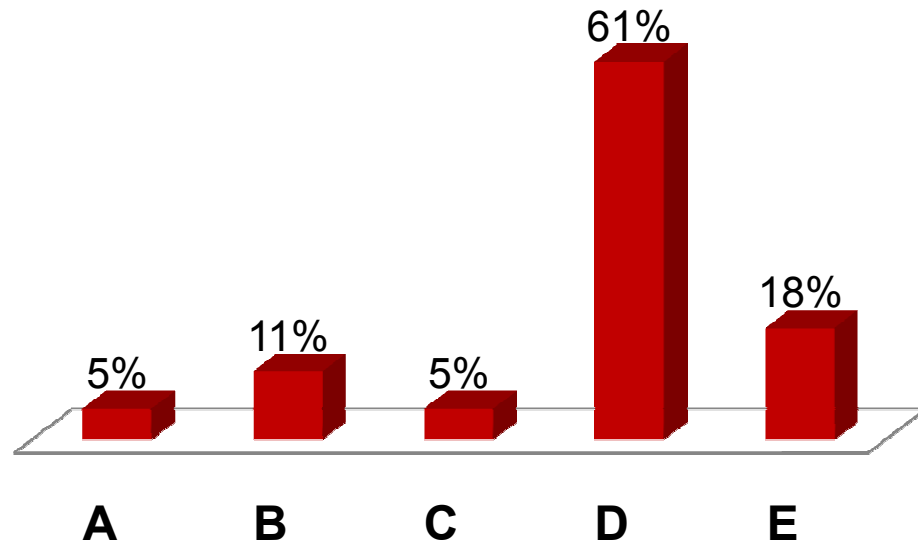
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Current State Questions

Understanding our customer's changing needs and forecasting market demand is a significant obstacle to meeting our production goals!

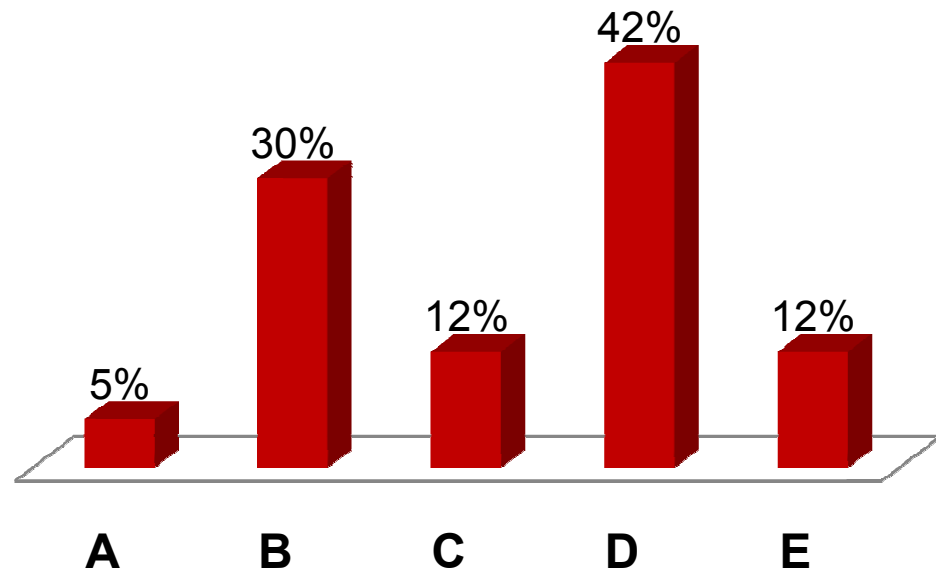
- A. Strongly Disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Current State Questions

Our drilling and blasting program is not producing consistent results and is limiting the efficiencies of our downstream processes!

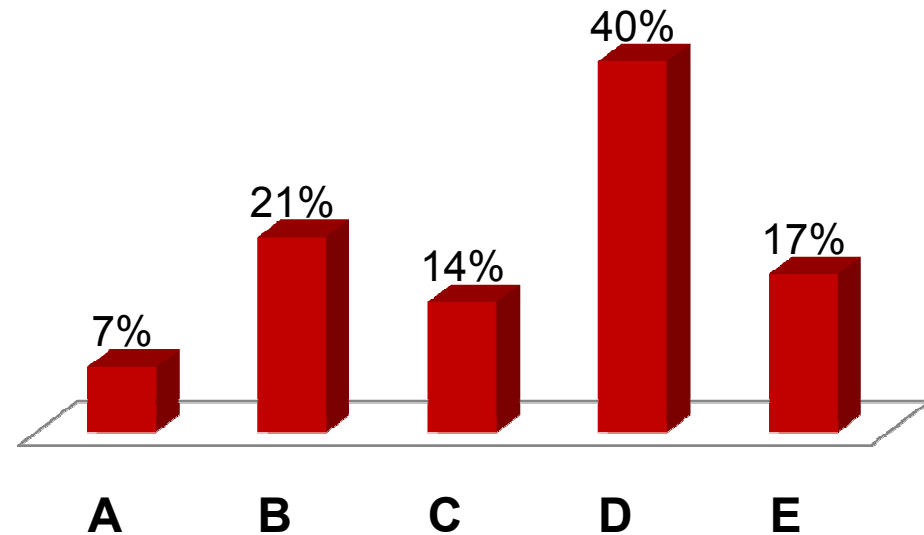
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Current State Questions

Drilling quality and / or dependability is a significant operational issue!

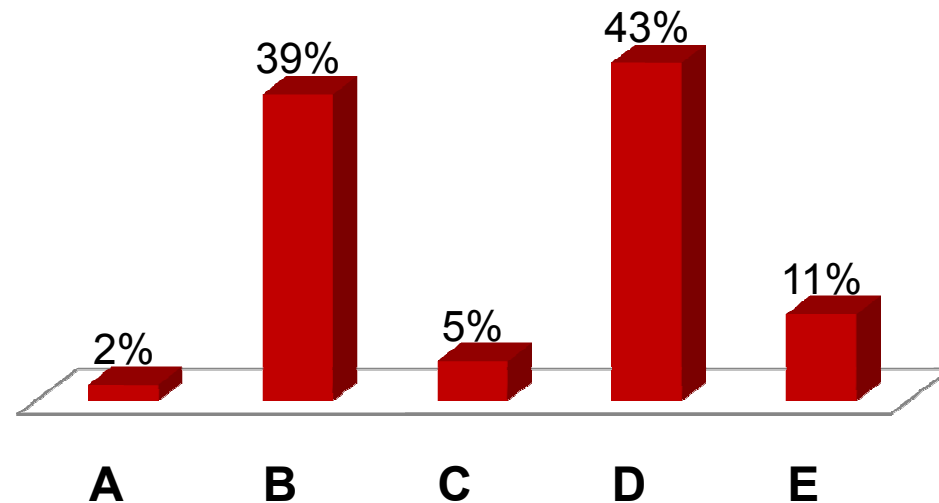
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Current State Questions

Community and public relations is a constant challenge. Our drilling and blasting program is the main contributor!

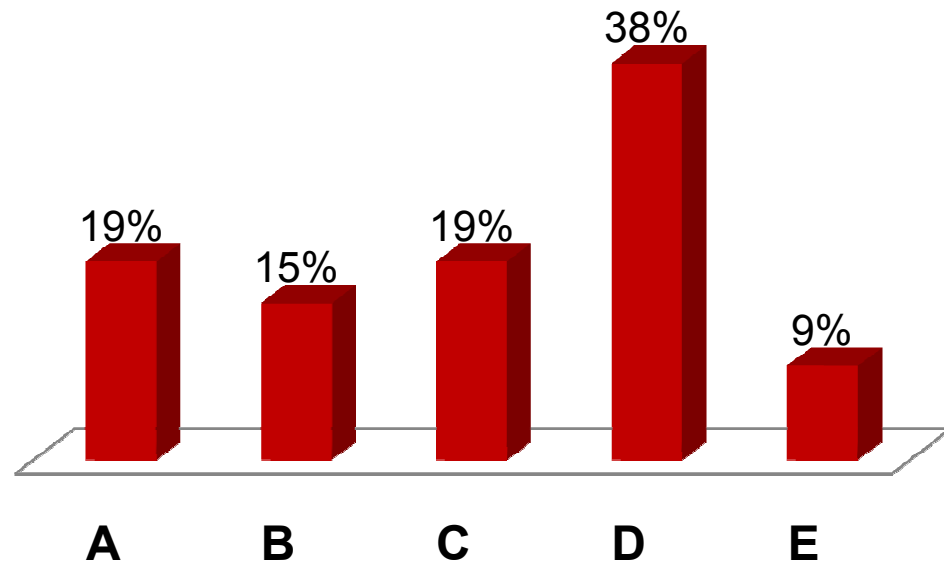
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Current State Questions

Contract drilling and blasting services provide the most cost effective solution for our operation.

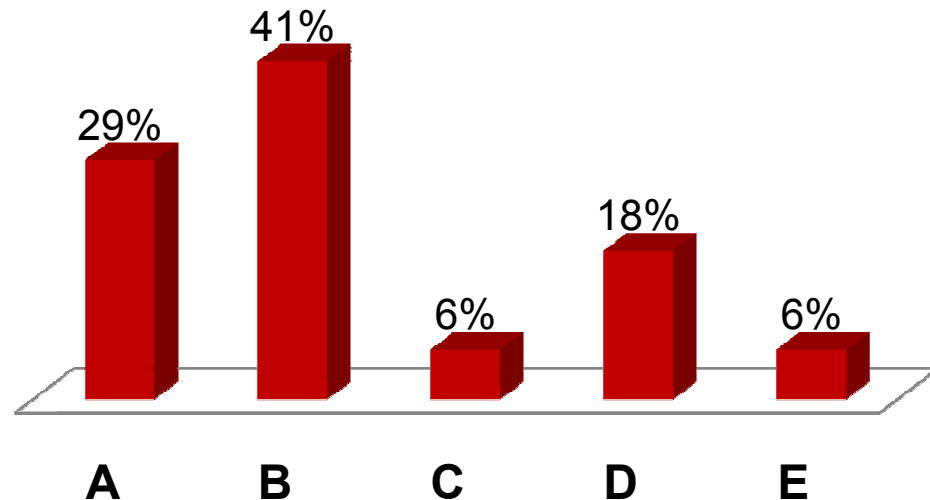
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Current State Questions

Our company routinely measures and correlates the downstream productivity effects from our drill and blast program.

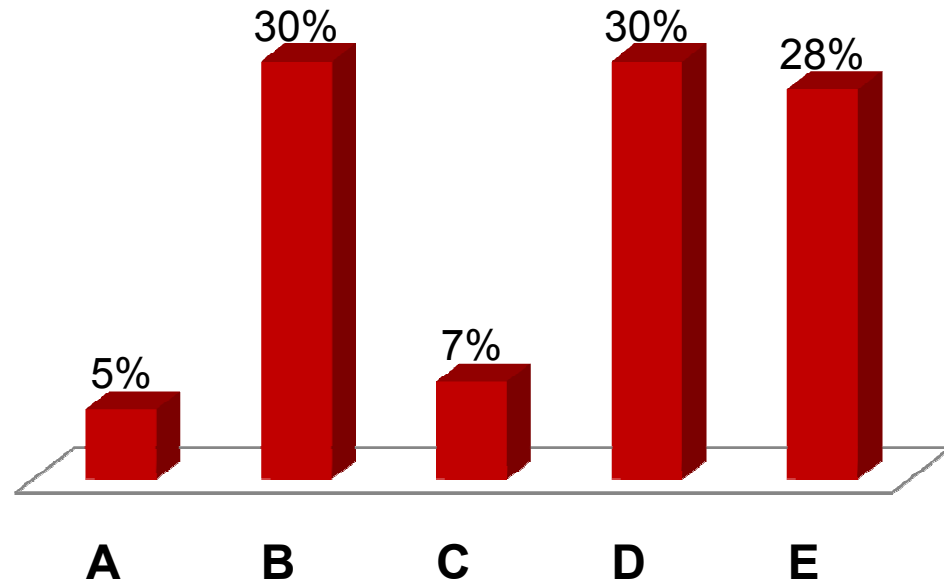
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Current State Questions

Maintaining a skilled workforce is my number one operational challenge in today's market!

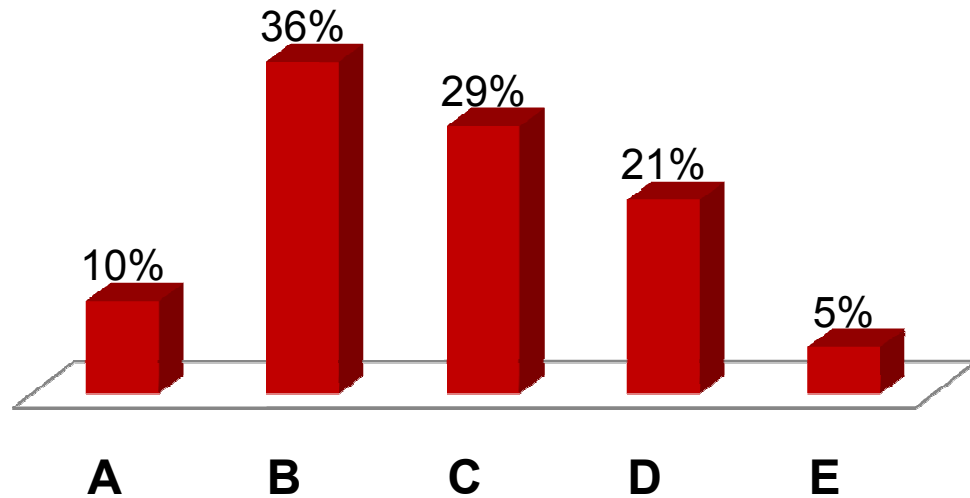
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Current State Questions

What would you estimate your Plant Efficiency is running at?

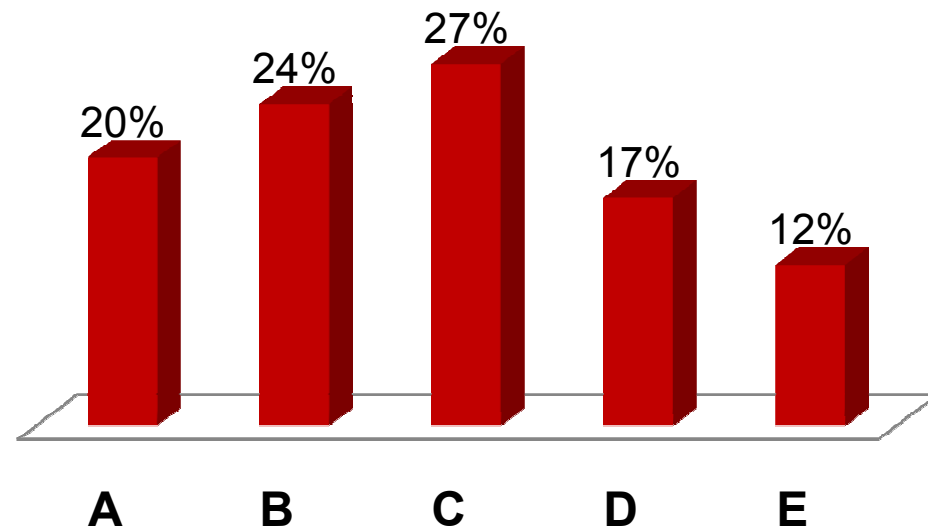
- A. Below 50%**
- B. 50% - 75%**
- C. 75% - 85%**
- D. 85% - 90%**
- E. Above 90%**



Current State Questions

Automation of our plant and processes is one of the biggest challenges facing our operation today.

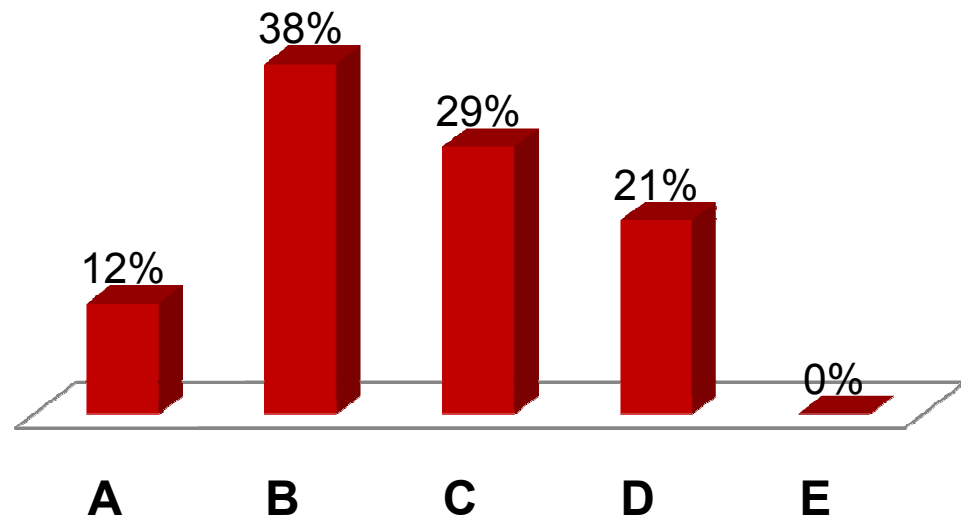
- A. Capacity**
- B. Product distribution**
- C. Product waste**
- D. Product quality**
- E. No concerns**



Current State Questions

What are your major crushing plant concerns?

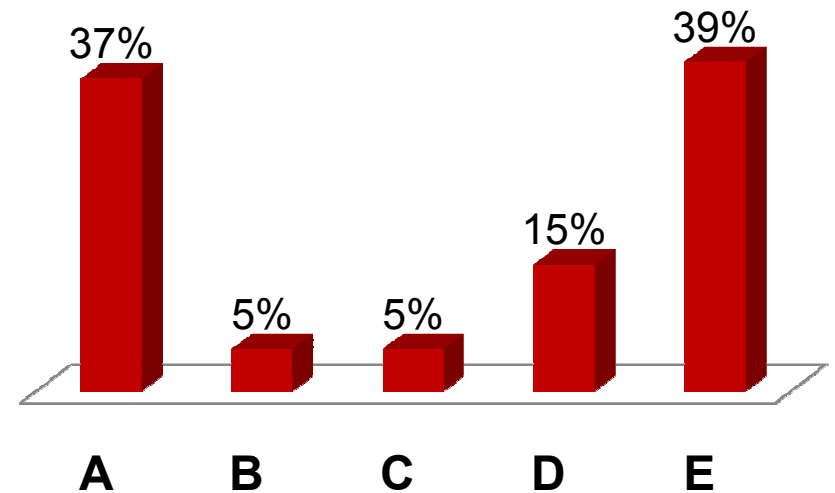
- A. Capacity**
- B. Product distribution**
- C. Product waste**
- D. Product quality**
- E. No concerns**



Current State Questions

For the following five operational areas listed, please identify your highest priority.

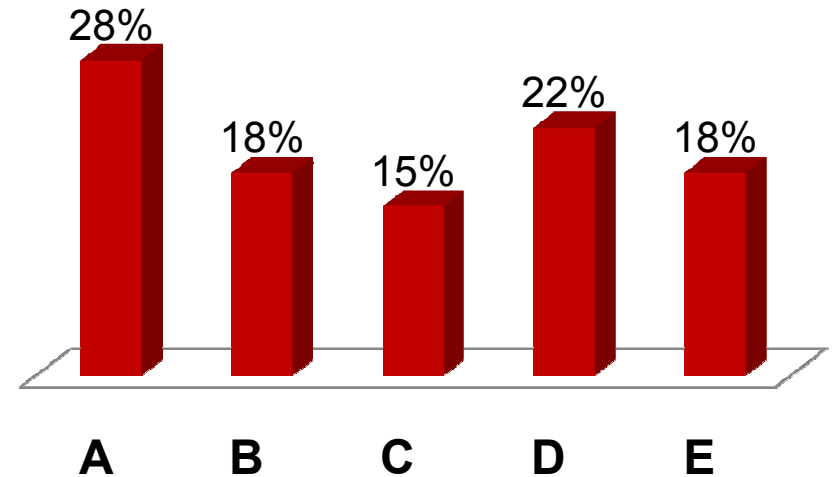
- A. Crushing / Screening**
- B. Load / Haul / Conveyance**
- C. Drilling and Blasting**
- D. Mine Planning / Mine Design**
- E. Workforce / Safety / Training**



Current State Questions

For the following five operational areas listed, please identify your 2nd priority.

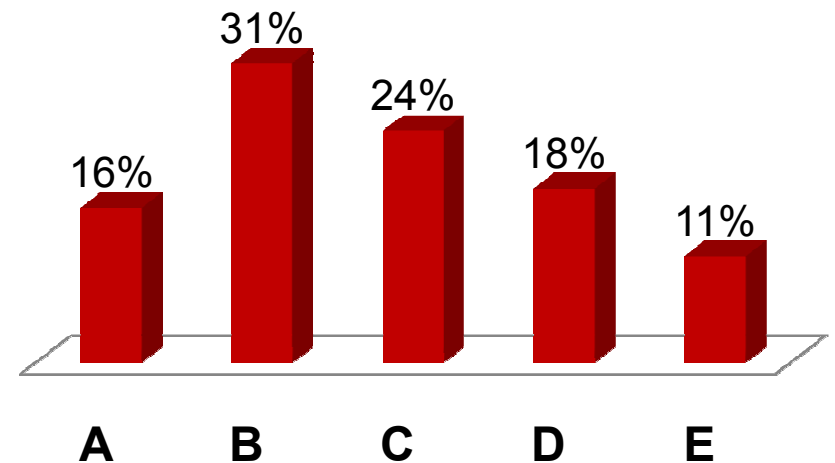
- A. Crushing / Screening**
- B. Load / Haul / Conveyance**
- C. Drilling and Blasting**
- D. Mine Planning / Mine Design**
- E. Workforce / Safety / Training**



Current State Questions

For the following five operational areas listed, please identify your 3rd priority.

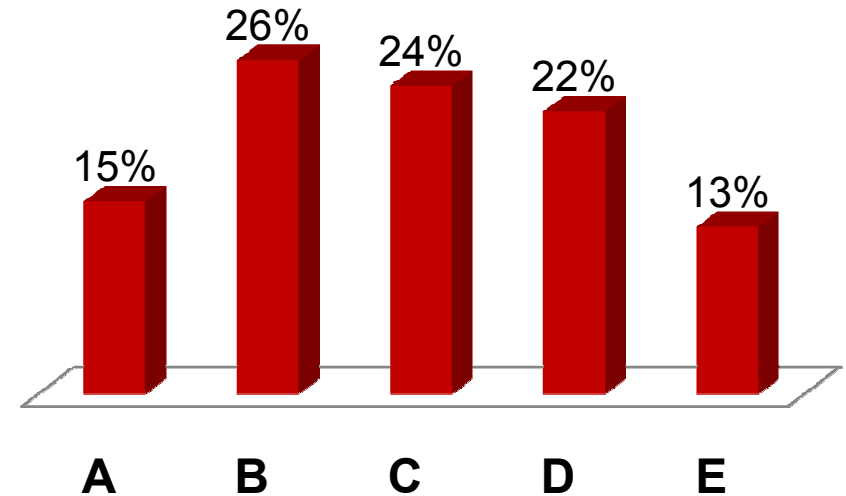
- A. Crushing / Screening**
- B. Load / Haul / Conveyance**
- C. Drilling and Blasting**
- D. Mine Planning / Mine Design**
- E. Workforce / Safety / Training**



Current State Questions

For the following five operational areas listed, please identify your 4th priority.

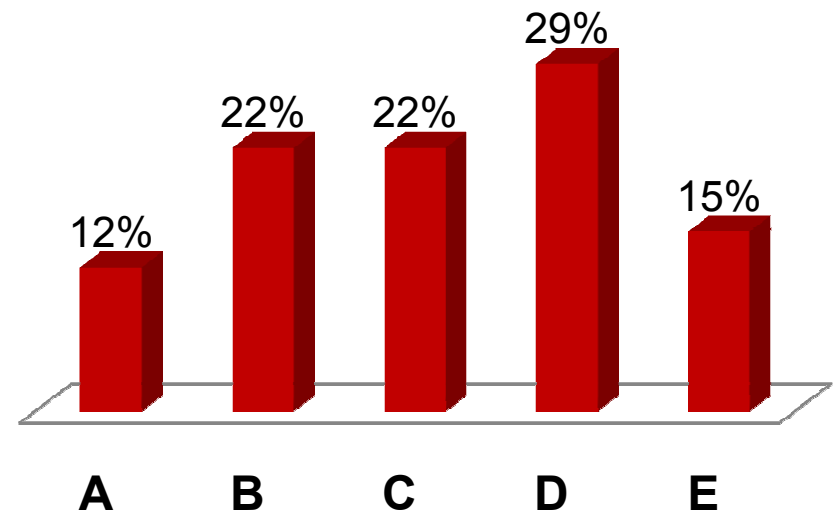
- A. Crushing / Screening**
- B. Load / Haul / Conveyance**
- C. Drilling and Blasting**
- D. Mine Planning / Mine Design**
- E. Workforce / Safety / Training**



Current State Questions

For the following five operational areas listed, please identify your 5th priority.

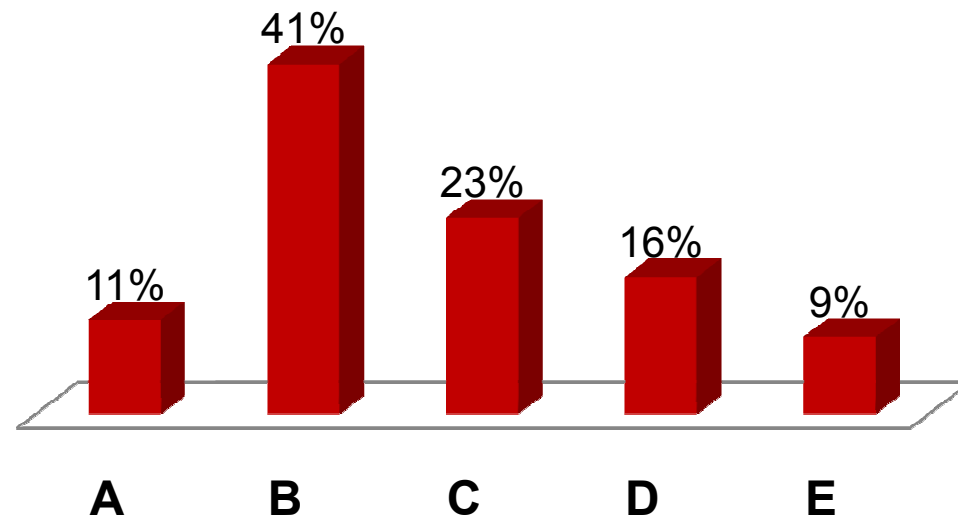
- A. Crushing / Screening**
- B. Load / Haul / Conveyance**
- C. Drilling and Blasting**
- D. Mine Planning / Mine Design**
- E. Workforce / Safety / Training**



Current State Questions

My operation's size in annual tonnage rate is...

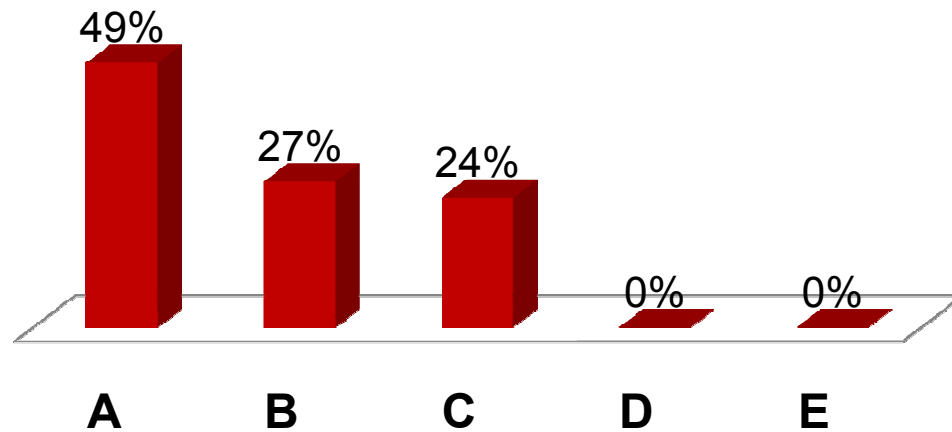
- A. < 500k
- B. 500k – 1,500k
- C. 1,500k – 3,000k
- D. 3,000k – 6,000k
- E. > 6,000k



Current State Questions

Our company's primary product is...

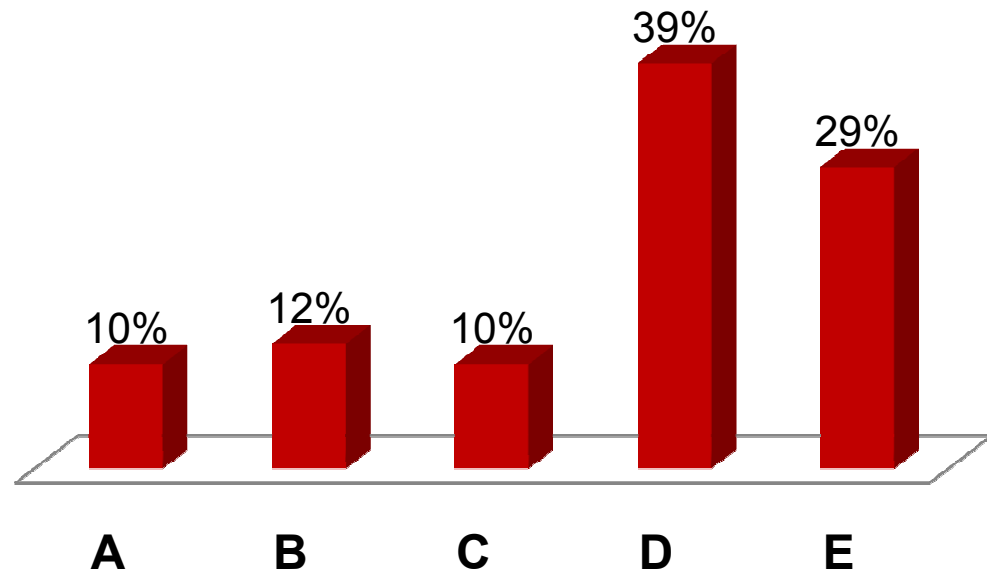
- A.** Limestone
- B.** Granite
- C.** Other



Future State Questions

In the next 5 – 10 years, our company's biggest challenge will be mine planning, site permitting, and / or the mine design process!

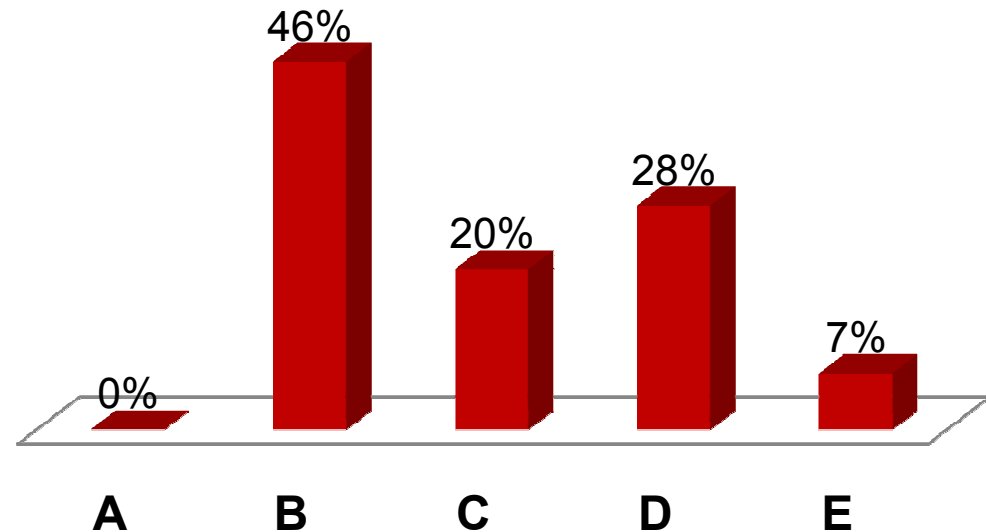
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

Loading / Haulage will be our most important operational challenge / investment in the future 5 years.

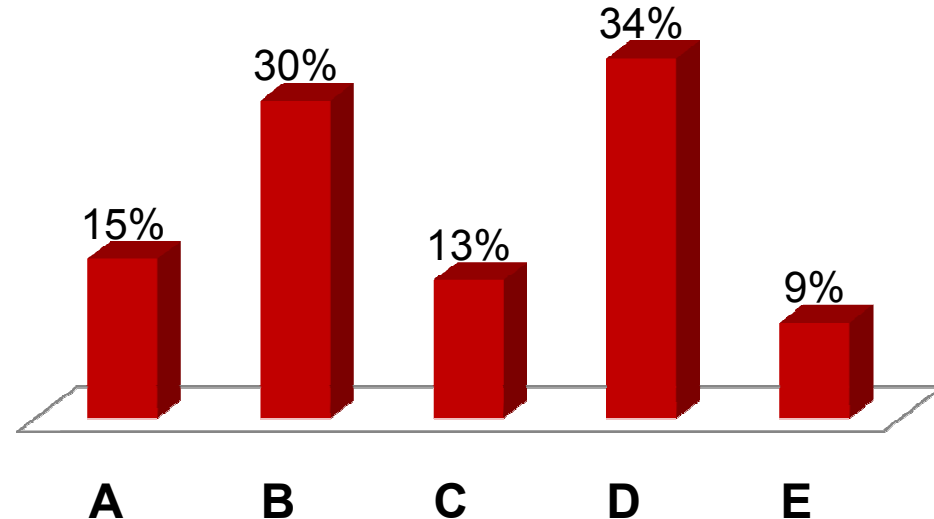
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

Conveyance will replace a significant percent of haulage requirements in our pit.

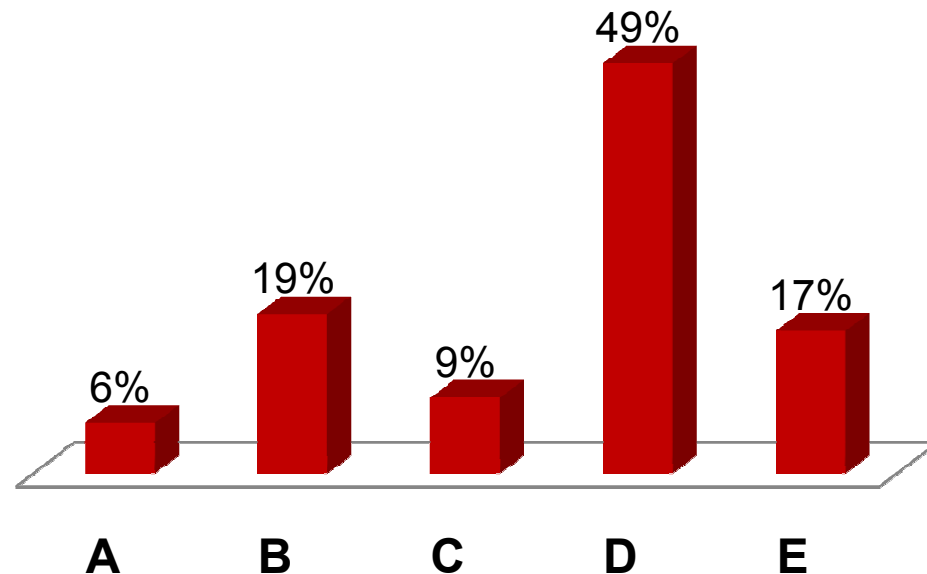
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

Understanding and responding to our customer's needs and market demands will be the largest challenge facing our customer in the future.

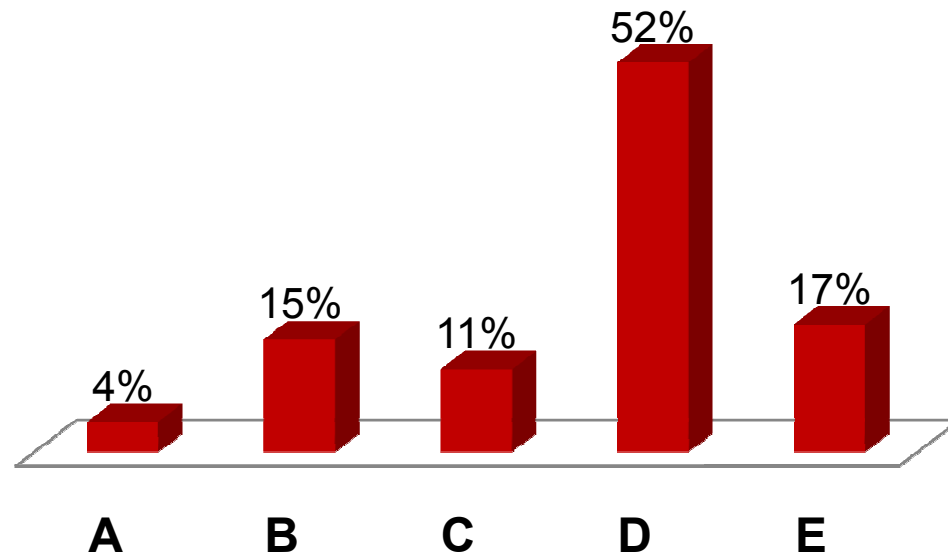
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

In the future, our company's drilling and blasting program will be fully integrated and linked to our downstream plant processing controls.

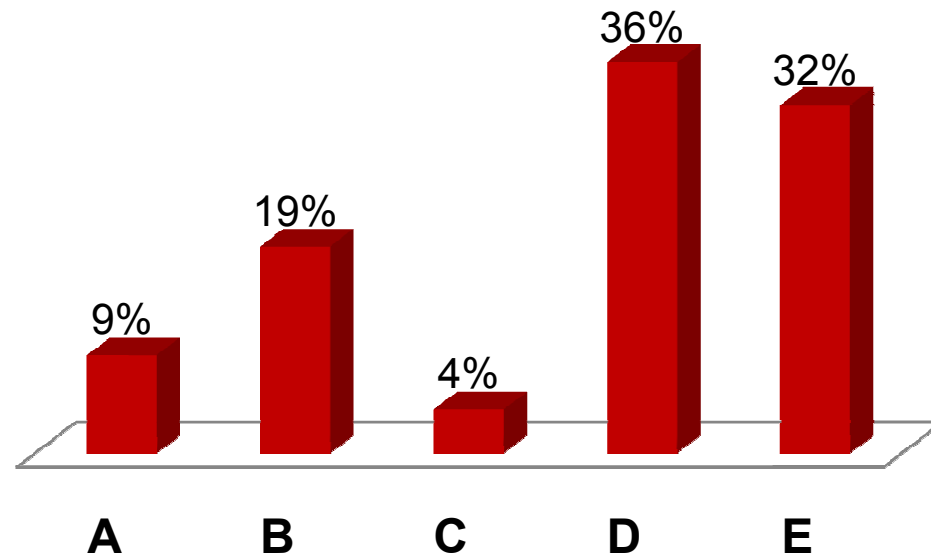
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

Community and public relations will continue to be a significant challenge for our drilling and blasting program in the next 5 years.

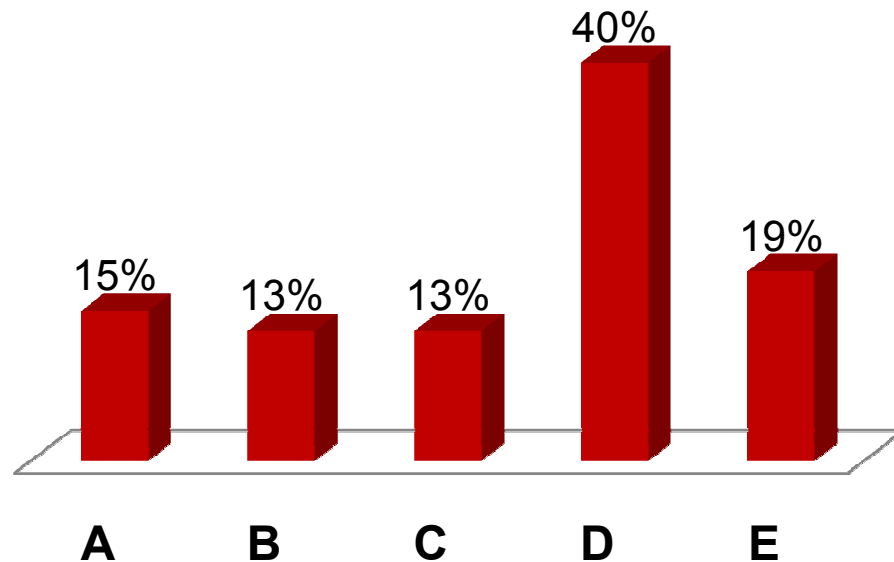
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

Contract drilling and blasting services will be utilized as a primary resource in the production process at my operations in the next 5 years.

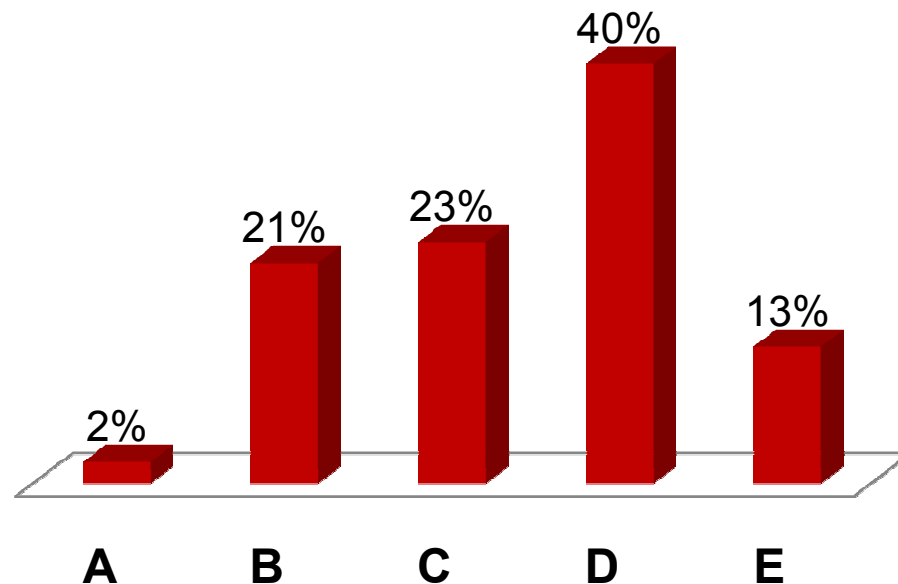
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

Drilling will remain a core competency of our operation(s).

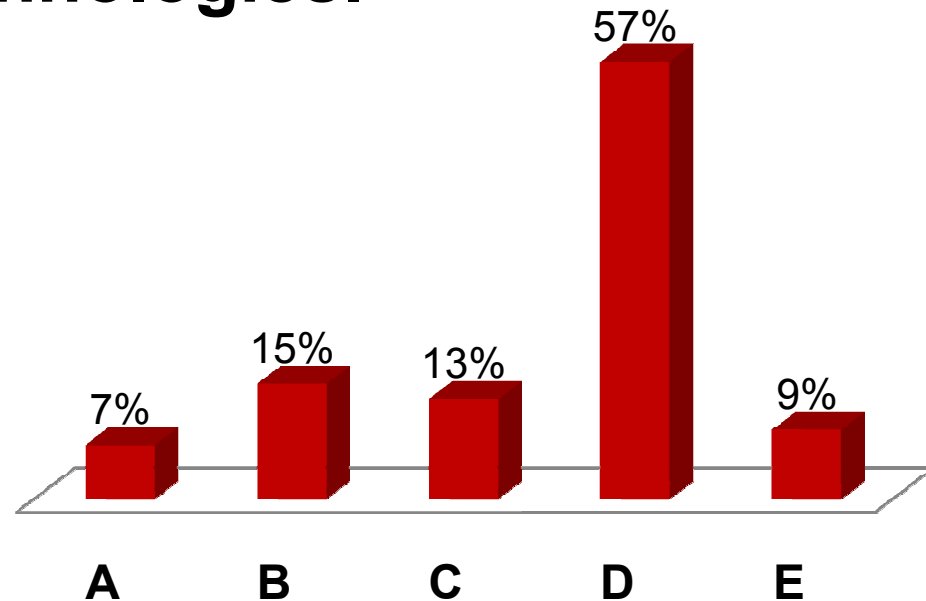
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

All processes (drilling to stockpiles) in the future will be linked to one another through measurement, automation and networking technologies.

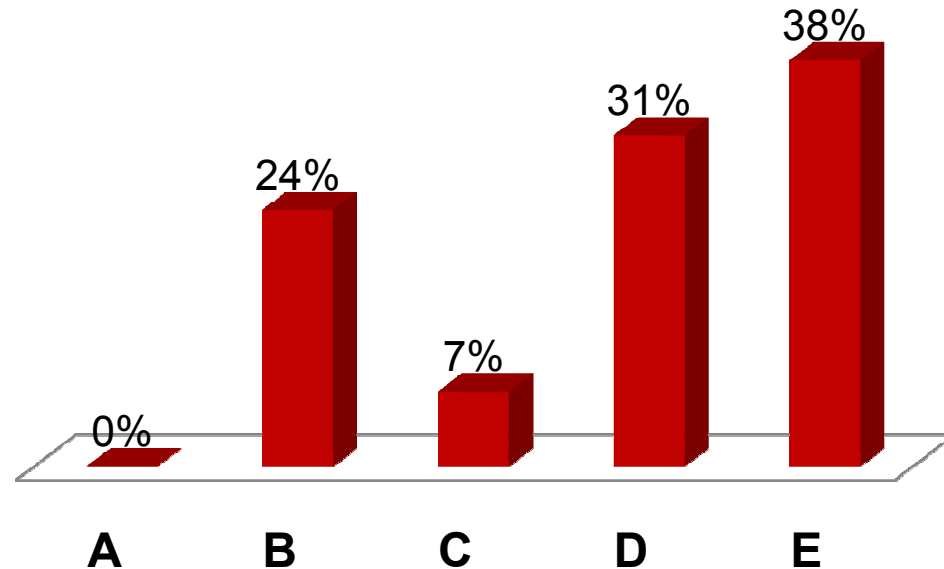
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

Maintaining a skilled workforce will be my number one operational challenge in 5 years.

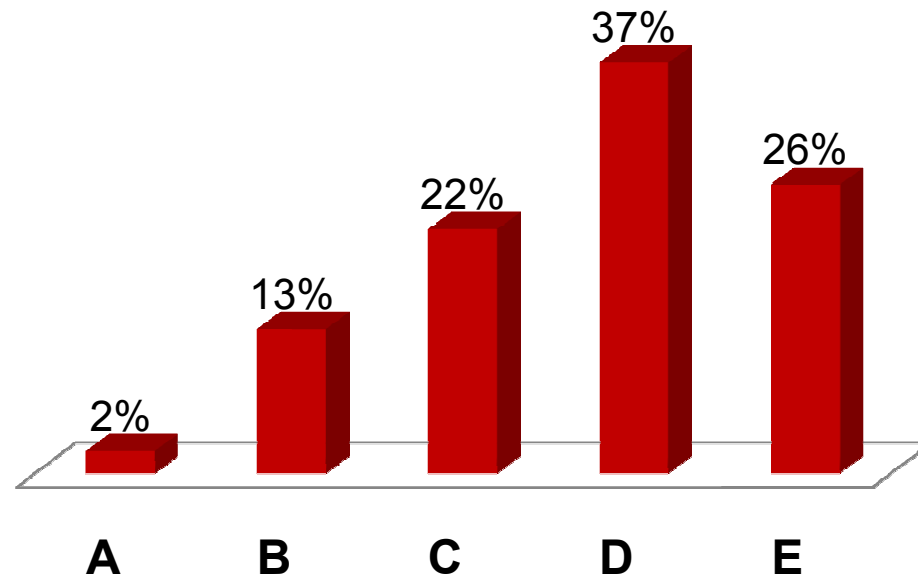
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

Improving our company's safety performance and lowering our TRIFR (Total Reportable Injury Frequency Rate) will be our company's primary goal in 5 years.

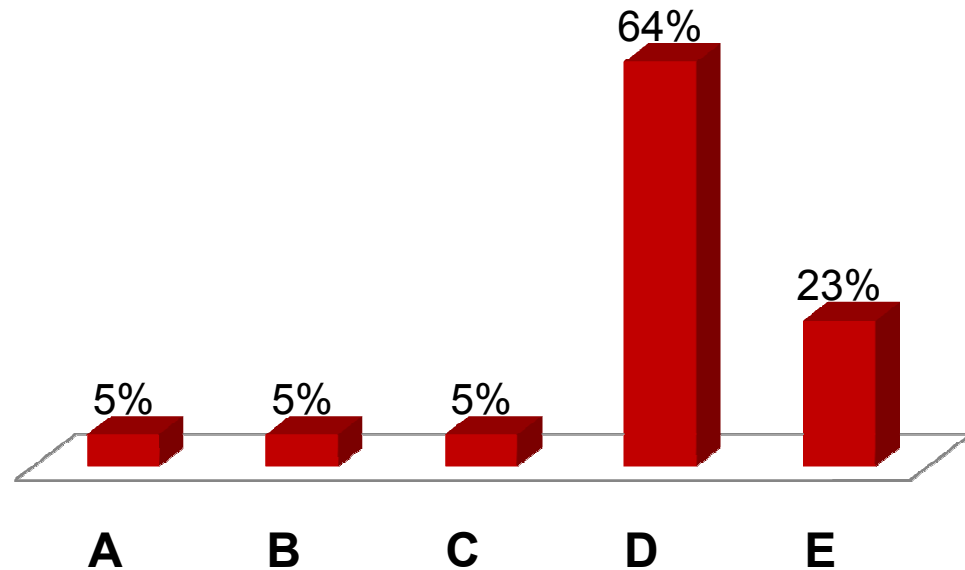
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

In 5 years, automation will be crucial to our business process.

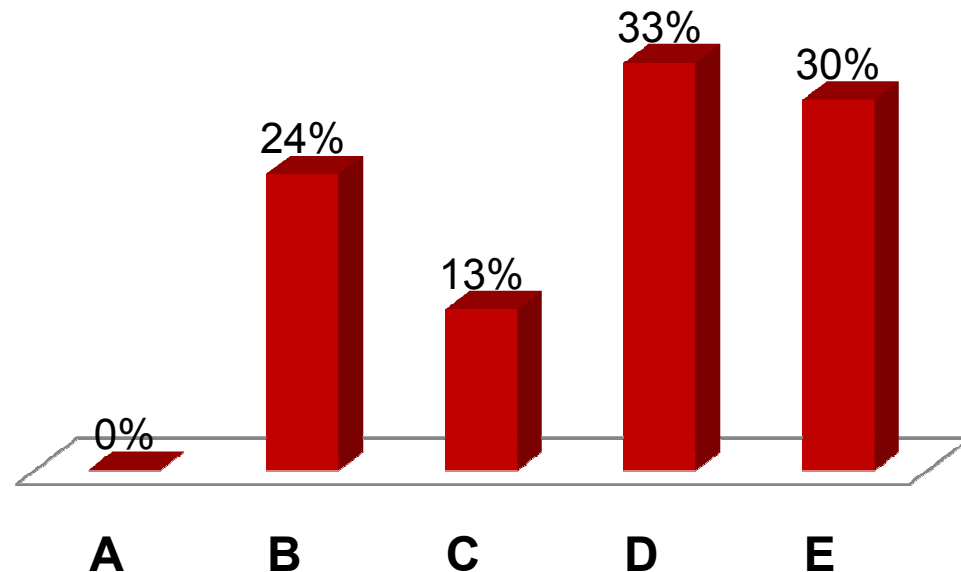
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

Fuel and energy consumption will be our number one operational cost.

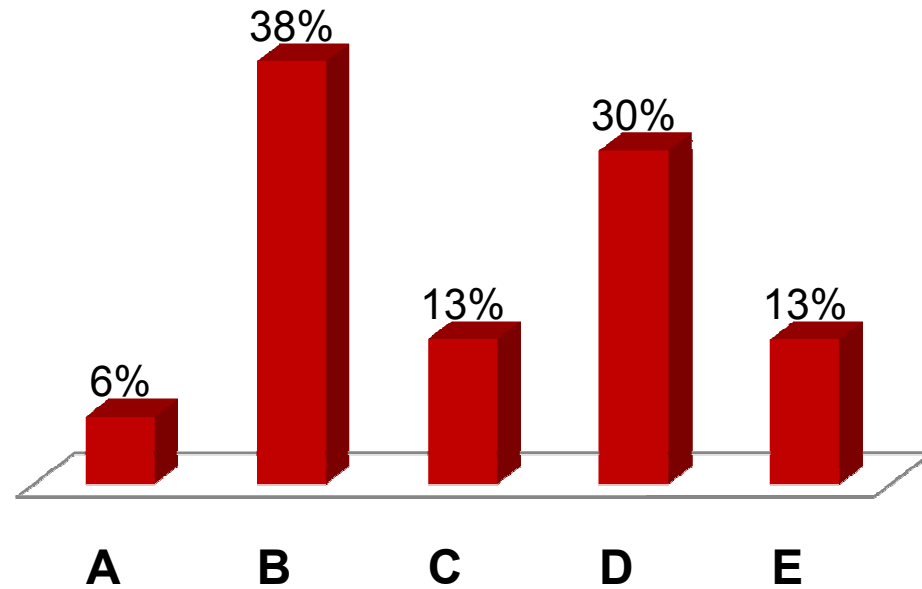
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

Product quality and meeting customer specifications will be a huge issue for our company in the future.

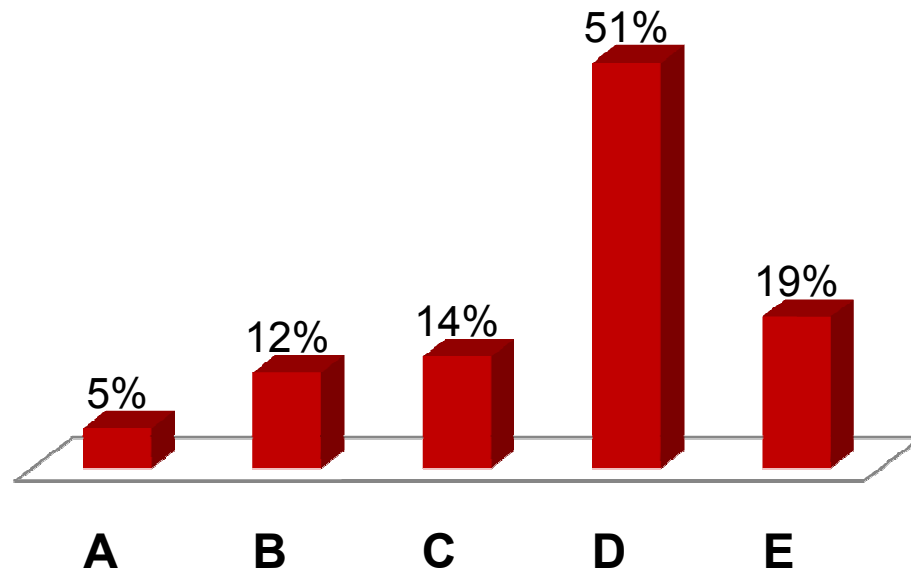
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

Mine planning / Permitting / Mine Design will be a challenge and major funding issue in the future.

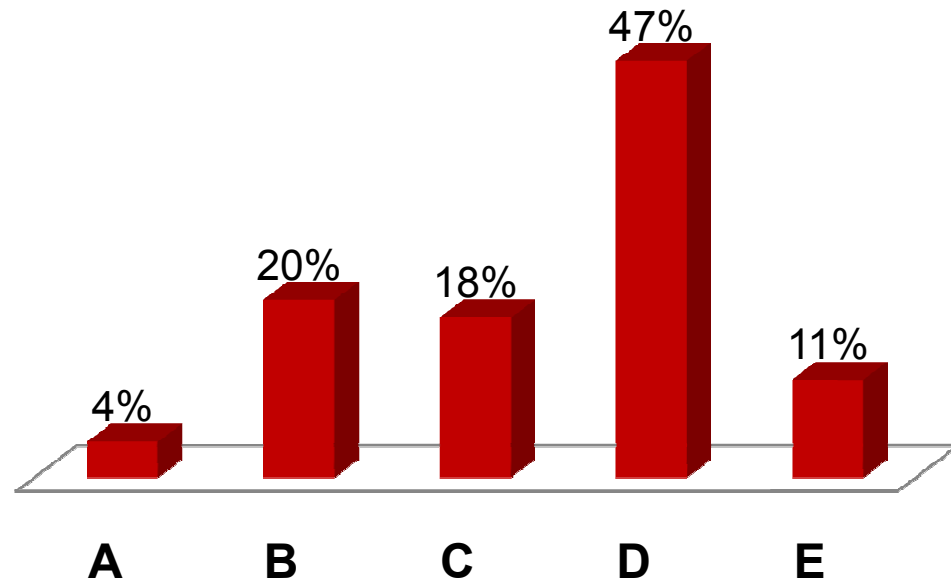
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

In Pit Crushing will be a viable option or consideration for my operation in the next 3 to 5 years.

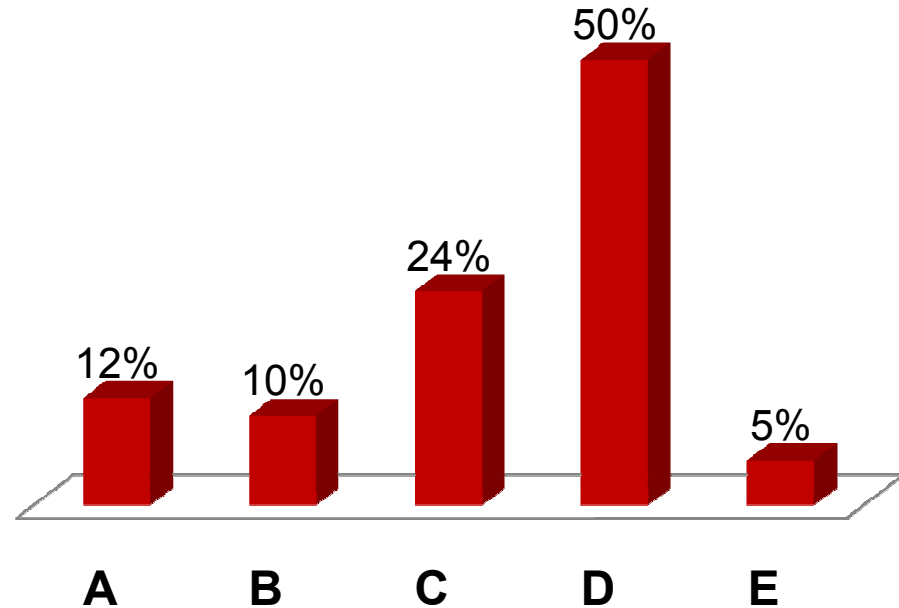
- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



Future State Questions

What might be the single largest obstacle in your operation preventing IPCC (In Pit Crushing and Conveyance) consideration?

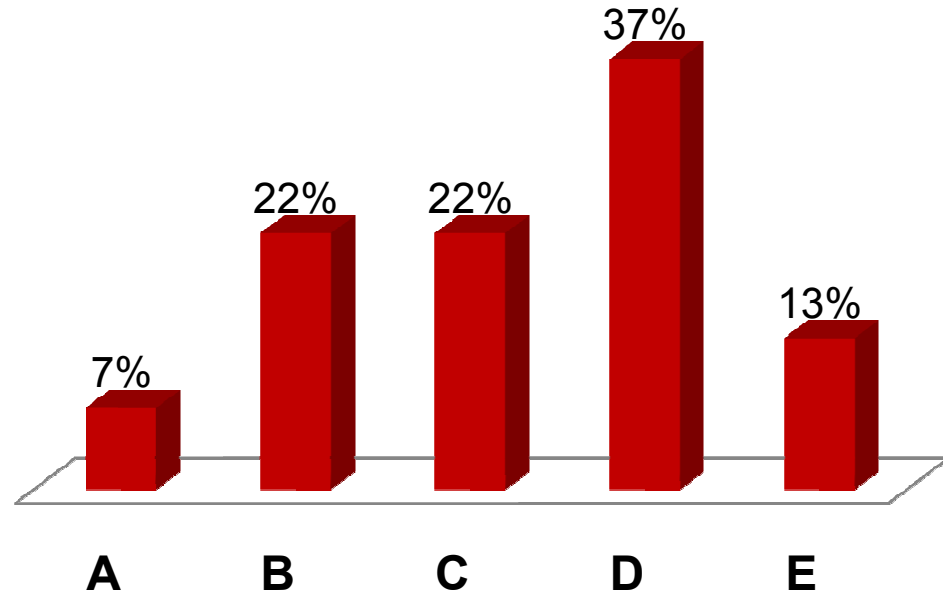
- A. Geology / Ore Body**
- B. Volume / Critical Mass**
- C. People / Bureaucracy**
- D. Capital**
- E. Other**



Future State Questions

Our carbon footprint will be a significant part of our operational planning and control process.

- A. Strongly disagree**
- B. Don't agree**
- C. No opinion**
- D. Agree**
- E. Strongly agree**



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