

The future of business with adoption of AI / Machine Learning

<https://open.lib.umn.edu/principlesmanagement/chapter/1-5-planning-organizing-leading-and-controlling-2/>

Background on issue 4 pg

- Background on AI
 - The term artificial intelligence was coined in the mid 1950's.
 - Today it is [defined](#) as the "subfield of computer science concerned with the concepts and methods of symbolic inference by computer."
 - The first project utilizing A.I. is traced back to 1955 when Carnegie Mellon University researchers developed a computer program to work through proofs resulting in theorems.
 - LISP
- Background on Business AI
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- Planning
 - Planning is the process of creating activities and organizing activities to achieve a result.
 - Planning requires that managers be aware of environmental conditions facing their organization and forecast future conditions. It also requires that managers be good decision makers.
- Organizing

- Organizing is the function of management that involves developing an organizational structure and allocating human resources to ensure the accomplishment of objectives. The structure of the organization is the framework within which effort is coordinated. The structure is usually represented by an organization chart, which provides a graphic representation of the chain of command within an organization. Decisions made about the structure of an organization are generally referred to as **organizational design** decisions.
- Leading
 - Leading involves the social and informal sources of influence that you use to inspire action taken by others. If managers are effective leaders, their subordinates will be enthusiastic about exerting effort to attain organizational objectives.
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- Controlling
 - Controlling involves ensuring that performance does not deviate from standards. Controlling consists of three steps, which include (1) establishing performance standards, (2) comparing actual performance against standards, and (3) taking corrective action when necessary. Performance standards are often stated in monetary terms such as revenue, costs, or profits but may also be stated in other terms, such as units produced, number of defective products, or levels of quality or customer service.
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- In the current era of technological innovation, companies are adopting more technologies and Consulting Firms are unable to keep up
- The amount of companies requiring business consulting grow every year and as a result firms are unable to keep up with learning new stuff for every firm.
- If nothing is changed large consulting firms will produce ineffective advice and inaccurate results.

Alts to the problem: 4 pages

- Replacing consultants with an AI
 - Description:
 - Using an artificial intelligence system to analyze companies behaviour to provide advice on their activities.
 - An AI could be used to rapidly analyze a company and learn faster than a human would be able to.
 - Pros:
 - Quicker results
 - More accurate results
 - Cheaper in the long run
 - Cons:
 - Takes time to develop
 - More expensive for upfront costs
 - Requires maintenance
 - Requires training

- Analysis
 - Pros are more beneficial for a long term plan. This alternative reduces the requirement for employees and increases the reliability of work being done.
 - This solution also scales much better
 - Allows companies to keep up with the quantity and technical nature of future clients and contracts.
 - No real model for predicting how well this would work due to limited existence today.
 - Training would mean there would be errors and inconsistencies in the first few use cases.
- Increasing the size of a consultant firm
 - Description:
 - Instead of replacing people in a firm with an artificially intelligent system, management firms should reply to the increased demand for more technical and highly analytical consulting.
 - Comparing the theoretical amount of people that would be required to equal an AI system.
 - Pros and Cons:
 - Pros:
 - Easy to do
 - Tried and true

- Creates jobs
- Cons:
 - Expensive in the long run
 - People can be unpredictable and error prone
 - Hard to maintain
- Analysis:
 - While this method has worked in the past it may not be as possible today.
 - Would work well for many smaller short term firms/contracts
 - Easy to predict how this would affect a firm's finances and productivity
- Recommendations
 - Recommend AI
 - Why
 - "Future proof"
 - Cheaper in the long run
 - Fixes the definite issue at hand (large quantity and high technical)
 - Would maximize a firm's work and therefore their profits
 - Would allow for innovation in other sectors of the industry
 - Reduces cost of work and therefore allows a firm to undercut the market and drive innovation
 - Allows the firms to move into new sectors. Analyze different markets.

- Implementaiton
 - ML Theories
 - Companies: Amazon, IBM, Google.
 - Startups: TouTiao, Acorn
 - Timeframe
 - Estimate Costs