

The Business Case for Automation

Presented by:

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MAKE YOUR BUSINESS
 **FUTUREPROOF.**



What is a business case?

According to Wikipedia...

“A **business case** captures the reasoning for initiating a project or task”

“A compelling business case adequately captures both the *quantifiable* and *non-quantifiable* characteristics of a proposed project”

And it needs to be COMMUNICATED effectively...

How many “communication books” on Amazon?

- A. 5,280
- B. 24,901
- C. 238,900
- D. Over 400,000
- E. 92.96 Million

Bonus Question: What do the other numbers represent?

“Over” 400,000 titles

The screenshot shows the Amazon.com search results for 'communication books'. The search bar at the top contains 'communication books' and the Amazon Prime logo is visible. Below the search bar, there are navigation links for Departments, Browsing History, and other account options. The main content area displays a list of search results, with the first three items highlighted. Each item includes a book cover, the title, author, price, and a star rating.

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How important is communication?



If you want to communicate effectively, you should speak their language



The “Perfect Order”

“The Supply Chain Council describes perfect order fulfillment as a discrete measurement defined as the percentage of orders delivered to the right place, with the right product, at the right time, in the right condition, in the right package, in the right quantity, with the right documentation, to the right customer, with the correct invoice”.

The language of supply chain

- Operating Cost Metrics
 - Inbound/Outbound
 - Fulfillment, Packaging, Transportation
- Order Accuracy
- On-time Delivery
- Order to Shipment time
- Packaging
- Damages
- Safety metrics

The language of finance

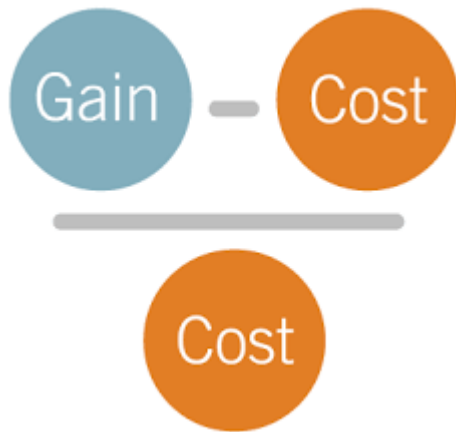
- Balance sheet & Income statement
- Revenue
- EBITDA
- Ratios
- ROI
- Opex/capex
- Cash flow
- Cost as a percent of sales
- Earnings, profits, stock value

Why speak “finance”?

- “Finance is the language of business”¹
- They influence spending, many CEO’s are ex-CFO’s
- There are always competing projects
- We have a great story to tell - automation results in savings

So what's the ROI?

It's NOT just "less than 2 years"...



ROI
RETURN ON INVESTMENT is the ratio of money gained or lost on an investment relative to the amount of money invested. It is a measure of profitability of t

Time value of money

- A dollar today is worth a whole lot more than tomorrow
- Three concepts used to analyze capital expenditures
 - Future value - \$ value in the future if loaned or invested
 - Present value – reverse of FV
 - Required rate of return – rate required in order to make an investment
 - Varies based on project risk
 - Depends on company’s “cost of capital”

3 primary ROI methods

- Payback Period
- Net Present Value (NPV)
- Internal Rate of Return

What is needed to do these analyses

- Capital Expense
 - Cost of the “project” - equipment plus installation, freight, and taxes
- Cash flows (savings)
 - For automation, labor is the most obvious
- Cost of Capital (aka “Hurdle Rate”)
 - Rate of return a firm pays it’s long term investors

Project Cash Flows (e.g. Savings)

- Labor savings
 - Wages
 - Liability costs (disability, lawsuits, etc.)
 - Reliability costs (sickness, injury, tardiness, consistency)
- Facility savings (space)
 - Rent
 - Utilities

Potential Cash Flows

- Increased revenue due to higher service levels
 - Faster order processing
 - Better accuracy
 - Less damage (less product handling)
- Value of additional space
 - Extend life of current facility and delay capex
 - Sublease extra space and generate revenue
- Less labor “risk”
 - Comp claims
 - Absence and FMLA
 - Turnover and training costs

Example

- Your company is considering investing \$3,000,000 in automation, e.g. “a goods to person picking system”
- The benefits are better storage/space utilization and lower labor costs
- The system will last 3 years (ease of calculations)
- At the end of 3 years, the system will save the company \$1,300,000
- Your company’s required rate or return – hurdle rate – is 8%
- Do you purchase this equipment or not?

Three methods

- Payback
- Net Present Value
- Internal Rate of Return

Payback Method

- Time required from the project to return the original investment

$$\frac{\$3,000,000}{\$1,300,000/\text{year}} = \$2.31 \text{ years}$$

- The payback period is less than the project life (3 years)
- Payback longer than project life is “no-go”

Net Present Value (NPV)

- Takes into account the “time value of money” and “cost of capital”
- NPV is equal to “present value” minus the capital expense

$$\text{Present Value} = \frac{FV_1}{(1+i)} + \frac{FV_2}{(1+i)} + \frac{FV_3}{(1+i)}$$

Where:

PV = present value

FV = future value

I = discount or hurdle rate

n = number of time periods

Net Present Value (NPV)

- Takes into account the “time value of money” and “cost of capital”

$$\text{Present Value} = \frac{\$1,300,000}{1.08} + \frac{\$1,300,000}{1.08} + \frac{\$1,300,000}{1.08} = \$3,350,000$$

$$\text{Net Present Value} = \$3,350,000 - \$3,000,000 = \$350,000$$

- The NPV is greater than “\$0”, so it should be accepted

Internal Rate of Return

- The interest rate where the NPV equals zero
- 14.36% rate of return vs 8% hurdle rate, so it should be accepted



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IRR Calculator

Initial Investment \$ 3000000.00

Cash Flow

| | | |
|-------------|---------|---|
| Year 1 - \$ | 1300000 | + |
| Year 2 - \$ | 1300000 | + |
| Year 3 - \$ | 1300000 | + |

[Add Year](#) [Calculate](#)

14.360%
Internal Rate of Return

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Taking it home...

- Talk the talk
- Don't underestimate the savings
 - Hidden labor costs
 - Space is NOT free
 - Opportunity costs
- Know your “hurdle”
- ROI is more than just payback
- NPV is the better method

For More Information:

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