

A Grounded Theory Study of Sales and Marketing Leadership in the High-Tech Industry

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Abstract

This paper explores the differences between sales and marketing managers specifically within Intel Corporation. The main topic of discussion will regard technical vs non-technical experience and how managers at all levels of the corporate ladder differ in their technical acumen. Analyzing qualitative research meetings and deducing those into a grounded theory study, the interviews showed preferences, philosophies, and predispositions that shed light on the differences between these types of managers. This paper creates a model for Intel that gives structure to analyze good or bad sales and marketing leadership. Then deciding if technical experience translates to the sales and marketing field.

Keywords: Sales and marketing leadership, technical vs non-technical, Intel Corporation

1. Introduction

Advancement in technology is accelerating at an amazing pace. Compared to Intel's first microprocessor, Intel's new 14-nanometer processor has 3,500 times higher performance, 90,000 times more efficiency, and is 60,000 times cheaper/per transistor.¹ Progress has been driven by multiple engineering fields, especially inside Intel and has been unmatched by any other industry. But without the ability to sell and market this technology, Intel would not be a top global company hitting 70 billion dollars in revenue. In the high-tech industry, sales and marketing teams collaborate with engineers more than any other industry. The teams inside of Intel are vastly different than the average marketing agency that sells everyday goods. The high-tech industry demands at least baseline technical knowledge from their sales and marketing experts because of their product's nature. Extremely technical products like an advanced Xeon processor or new software requires knowledge of function and impact from the marketing force to pitch and sell units. To fill the need for technical knowledge in a business unit that does not customarily require technical experience or knowledge, hiring managers have brought in engineers looking for a career change. Now the mix of education and training backgrounds on Intel's sales and marketing spectrum is quite diverse. That is the back story for this paper, and it is time for a thorough analysis. What are the differences between a sales and marketing manager with technical experience, and a manager with no experience in those same practices? Technical experience for marketing managers at Intel Corporation can shape the way those managers lead their peers. Reflecting on the differences between managers with or without technical experience inside of this corporation can give anyone in corporate America a better understanding of what to look for and what you will find inside of Intel.

2. Literature Review

Accumulating skills are extremely important for anyone in a professional field. The abilities and knowledge to perform specific tasks that pertain to information technology, mathematics, or science for example, are normally referred to as technical skills.² Attributes like communication skills, attitude, and adaptability are examples of soft skills or non-technical skills that aim towards effective interpersonal interaction. A well-documented field of practice that both technical and non-technical skills is the medical industry. This is an extremely precise industry, one fault by the surgeon can make the difference whether a patient lives or dies. So, where do soft skills fit into this industry?

2.1. Technical VS Non-technical Skills in the Medical Field

Good hand-eye coordination and psychomotor skills are examples of surgical skills that now have structured assessment testing. Technical deficiencies are highly publicized and acted on promptly. Communication, teamwork, leadership, management, and lifelong learning are the key non-technical skills that lead to more successful procedures in the operating room. An article done by Riza Agha, Alexander Fowler, and Nick Sevdalis expressed that non-technical skills are greatly significant in surgery and surgical training; a customary focus on technical skill acquisition and skill in that alone is insufficient for the delivery of a modern, safe operating practice.³ Results found that from over two hundred and thirty million major surgical operations a year, there are approximately seven million complications and one million deaths. This article concluded with this, “Being a good surgeon is more than just being a good ‘pair of hands’; it’s about being a good team player, who listens and communicates well with patients and colleagues and empowers them to reach their full potential.” Other sectors of the medical field have found similar evidence.³

Drawing comparisons of his industry to other high-risk industries like aviation or nuclear power, and how they stress the importance of non-technical skills to protect against errors. In the intensive care unit, Tom Reader, R. Flin, K. Lauche, and B.H. Cuthbertson published a similar article on medical operations and identified the best model to use for skill implementation. Below, the Anesthetics' Non-Technical Skills (ANTS) taxonomy was identified as the best starting point for the development of non-technical skills.⁴

Table 1. Model for non-technical skill implementation in medical operations.



Reader et al. had this to say about the implementation of the ANTS system:

“From the results of this evaluation, the ANTS system appears not only to have a high level of acceptability but also to provide a reasonable level of reliability and accuracy when used by anesthetists in an experimental setting to rate non-technical skills demonstrated in simulator scenarios.”

There are many non-technical skills that have been deemed important for the medical field. But what is the hierarchy of importance for these skills?

While researching failed surgical procedures, findings pointed to an underlying behavioral problem. This concept, along with other previous research, helped Steven Yule and his associates from the University of Massachusetts develop a rating system for surgeons' non-technical skills. They interviewed twenty-seven surgeons and developed a skills taxonomy composed of five categories and the elements of those skills.⁵

Table 2. NOTSS skills taxonomy.

Category	Element
Situation awareness	Gathering information
	Understanding information
	Projecting and anticipating future state
Decision making	Considering options
	Selecting and communicating option
	Implementing and reviewing decisions
Task management	Planning and preparation
	Flexibility/responding to change
Leadership	Setting and maintaining standards
	Supporting others
	Coping with pressure
Communication and teamwork	Exchanging information
	Establishing a shared understanding
	Co-ordinating team activities

The next phase of research was to take a separate group of 16 surgeons and have them attach good and bad behaviors to each element listed. Taking this feedback, Yule et al. were able to create a prototype behavior marker system. See the example for situational awareness below.⁵

Table 3. Prototype of behavioral marker system for situational awareness.

Category	Element	Good behaviours	Poor behaviours
Situation awareness	Gathering information	Ensures that all relevant investigations (e.g. imaging) have been reviewed and are available Liaises with anaesthetist regarding anaesthetic plan for patient	Arrives in theatre late or has to be repeatedly called Does not ask for results until the last minute or not at all
	Understanding information	Looks at CT scan and points out relevant area Reflects and discusses significance of information	Overlooks or ignores important results Asks questions which demonstrate lack of understanding
	Projecting and anticipating future state	Plans operating list taking into account potential delays due to surgical or anaesthetic challenges Verbalises what may be required later in operation	Gets into predictable blood loss, then tells anaesthetist Operates beyond level of experience

Yule et al. concluded by saying that with this taxonomy, it is time to test its reliability and usability. Envisioning a non-technical skills training where surgeons get evaluated annually.

2.2. Non-technical Skills in Engineering

An empirical study showed that communication skills (87%), problem-solving (47%), interpersonal skills (48%), and being a team player (49%) were the four non-technical skills with the highest demand in engineering.⁶ This data was taken from job postings for software positions in multiple continents. Faheem Ahmed's empirical study on non-technical skills in software engineering is a great starting point into the engineering industry. Ahmed concludes that outside of communication skills, other non-technical skills are not represented like they should be. For example, adaptability only came in at 30%, a skill that needs more acknowledgment from the software industry. Drawing to the conclusion that non-technical skill requirements are substantially alike with the majority of cultures. But something worth noting is that North America had the highest demand for every skill that was recorded in the study. See the chart below.⁶

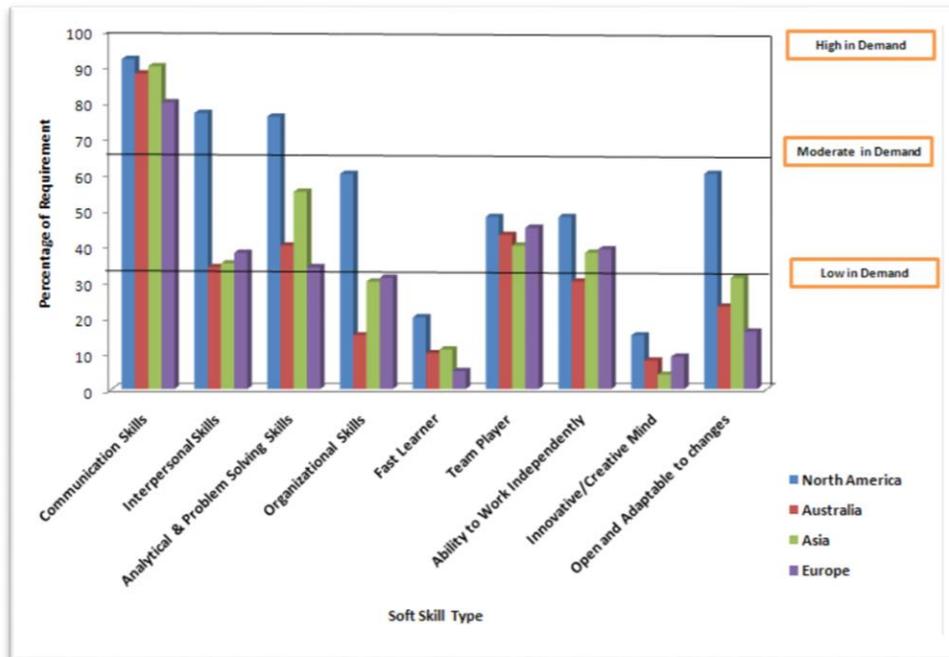


Figure 1. Non-technical skill requirements for software engineers in four regions

Since North America has the most demand for non-technical skills, what is the appropriate reaction to this? There needs to be a change in the way members of the technical community get their training.

There is a gap between what is taught to technical students in school/other training and what is required by employers. The skills that are not adequately taught but are desired in the real world are non-technical skills. A study by George De Lange identifies the most important non-technical skills required by entry-level engineering students. The specific skills are almost exactly like the studies of Faheem Ahmed. De Lange concludes that more formal education of these skills should be implemented for the gap to close. If these skills are not taught in schools along with traditional technical skills, students will have to learn eventually as they join the workforce.⁷

In every organization, leadership is needed to perform all tasks. Sanjeev Kumar and J. Kent Hslao wrote on how engineers learn soft skills the hard way once they reach their professional careers.⁸ Cross-referencing from Summers et al., Kumar states that “Engineers are frequently overlooked for senior management positions; instead, individuals with MBAs or JDs, whose education better prepared them in communication, leadership, and management skills, are often awarded these positions.” This is because “engineers generally focus on technical details and often overlook the broader picture. However, today's engineers are asked to do a lot more than just apply scientific knowledge to solve practical problems.”⁸ Implementation will take more than new worksheets at universities, the teachers need to modify their teaching style.

2.2. High Tech Marketing

The strength of research and development along with marketing is important because the high-tech industry is extremely volatile with the amount of innovation and growth the industry has seen. William Shanklin and John Ryans for the Harvard Business Review give an example of an engineer turned company president that had no competitive marketing experience:

“they were contemptuous of marketing activities and refused to commit any funds to explore consumer sentiment, potential market demand, and possible advertising themes. Not surprisingly, the company has yet to earn a dollar of earnings and is on the verge of bankruptcy. The technical skills and acumen that served the president so well before have been much less relevant to the different demands in a market-driven milieu.”⁹

This idea of taking research and development and marketing together has fostered collaboration inside of the industry and has led to more mixed roles between the two branches.⁹ But there are conflicting opinions on this topic.

Christoph Grimpe et al (2017) say that this model is no longer the case. The dual strategy of investing in R&D and marketing lowers productivity in the current market. The qualitative study gave great insight into the relationship between technological and marketing innovation. Dis-synergies between the two schools of thought emphasize how technology is the foundation for the company, but marketing is the untapped potential.¹⁰

2.3. Skills-Based Leadership

Skills-based leadership is best described as emphasizing the skills and abilities of the leader, suggesting that personality and other leadership approaches focus on the personality too much.¹¹ These skills are developable according to Robert Katz who created tiers for administrative skills at different management positions. Katz was adamant about the fact that skills are a thing that people can be trained for or develop themselves. Traits are the characteristics that define a person and are given to them. View his chart below.¹¹

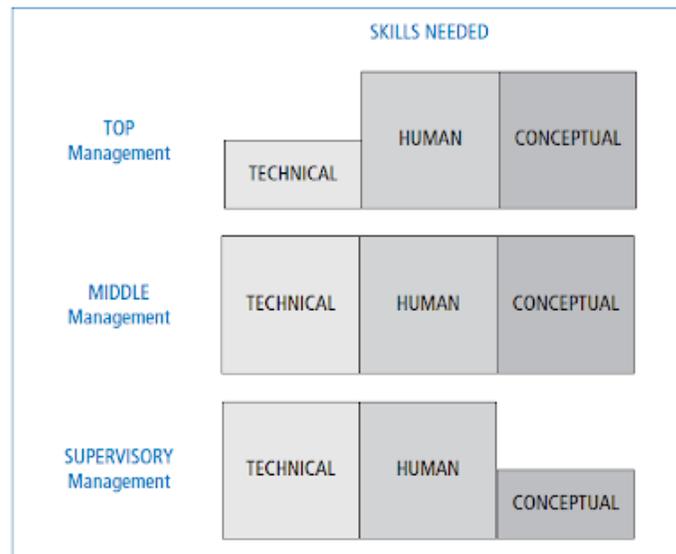


Figure 2. Management skills necessary at various levels of an organization

From Northouse definitions for this chart include:

- Technical skills are having knowledge about and being proficient in a specific type of work or activity, requiring competence in a specialized area.

- Human skill if having knowledge about and being able to work with people, instead of things, otherwise known as "people skills".
- Conceptual skills are abilities to work with ideas and concepts, like in organization and other intricacies.¹¹

The three skills approach intellectualizes leadership levels, the importance of these three skills categories are dependent on where the individual is on the corporate ladder.

3. Methodology

Selected for this study were sales and marketing professionals from Intel Corporation. Their expertise and hierarchy ranged from product marketing with almost exclusively technical backgrounds to digital marketers in the corporate sector. Ranging in sex, age, and ethnicity, the interviewees ranged from top executives and vice presidents, down the management chain to employees with no one reporting to them. These professionals were selected from the researcher's network, meaning they had already had at least one conversation and were already acquainted with each other. This fostered more open discussion because the participants were already comfortable talking about subjects that were sensitive for a business environment.

The research approach used in this paper will relate to a grounded theory study. The questions asked were qualitative in order to get a broad overview of the process. The interviewee is given the freedom to talk about a variety of subjects. This conversation model led to many valuable takeaway points. Shown below is a list of questions that could have been asked. Some questions turned into long conversations because of interest, and some questions did not get asked at all because of relevance, flow, or time.

Questions about past and present managers

1. How many managers have you had at Intel and what was their technical experience?
2. What is your current manager like?
3. What made some managers stand out from a leadership perspective?
4. Tell me about (x) manager, how did their technical experience help your team?
5. Tell me about (x) manager, how did they run their team differently than others?
6. Have you ever had a bad experience with a manager?
7. What is the advantage of having a manager with technical experience?
8. What is the advantage of having a manager without technical experience?
9. Who is the best manager you have ever had, why?
10. How do good managers lead their teams?
11. What differences have you experienced between managers over time?
12. Do you think technical experience translates well to the marketing field, why?
13. What do you want in a manager?
14. Do you prefer a manager with technical experience?

Question about them as managers

1. Do you have technical experience, why or why not?
2. What role does your experience play in your managerial role?
3. How does your experience help you succeed as a marketing manager?

4. Does your experience give you an advantage to lead in your eyes?
5. How would you be a different leader if you had different technical experience?
6. Does your technical experience set you up for more success in a marketing role?
7. What is the value you present as a marketing manager?
8. What is your leadership philosophy?

Once this information was collected, it was recorded and coded into a system. After this system was categorized it was made into a theoretical visual model. This will be laid out in the next section.

4. Data Analysis and Findings

The data analysis presented how marketers can reflect on team dynamics and leadership inside of Intel’s sales and marketing. The visual model is below.

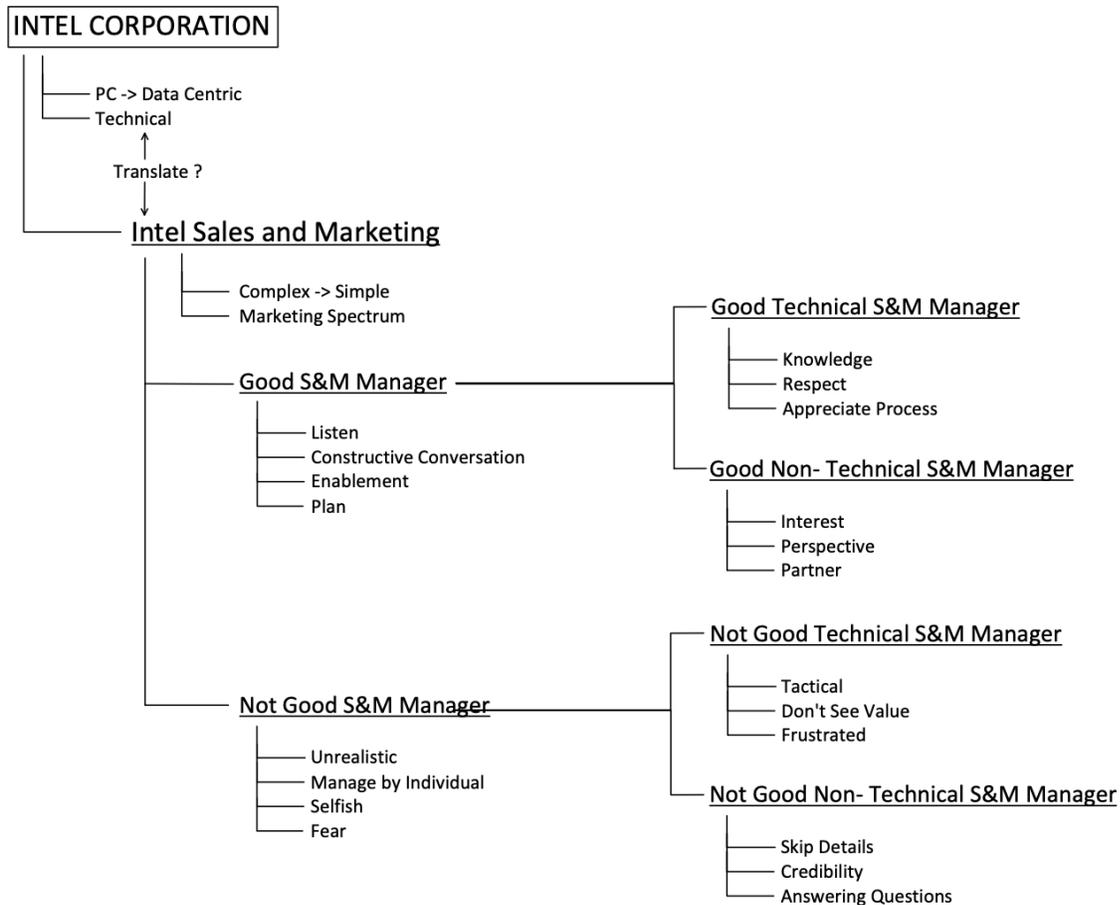


Figure 3. Model of leadership for Intel sales and marketing based on technical experience

4.1. Good Technical Sales and Marketing Managers

The first thing that a good manager with technical experience does is appreciate the sales or marketing campaign process. Naturally, people with technical experience are trained and educated to have a research-oriented outlook.

When this outlook is converted to a sales and marketing group, this saves time in the future. Long and confusing e-mail chains can be avoided when teams pay attention to the details and appreciate the process. Technical managers also think of resources as more than money. Appreciating other aspects of the plan like headcount and process leads to success without wasting the team's talent.

Sales and marketing managers that have technical experience also have an advantage in communication. Technical communication has been described as "another language", and most Intel employees can communicate in a technical capacity. As a marketer, being able to speak technical language allows you to collaborate with product teams. This collaboration can give better knowledge of what to market and how to communicate with customers. Also, the technical experience can garner you more respect with your peers depending on the group.

The most important part of being a successful manager with technical experience is having an appreciation for the marketing discipline. When you understand that there are different rules and norms for different business fields you respect their opinions. The best technical managers see communication as a necessary skill set. They respected what marketing brings to the table and are open to non-technical content. This is called a mindset shift, when entering a new field like sales and marketing, shift understanding to it being a separate discipline with separate modes of operation.

4.2. Good Non-Technical Sales and Marketing Managers

Because of their background, good non-technical sales and marketing managers bring a fresh perspective. So many times, teams get accustomed to one way of thinking that after a while their work can become inefficient without even knowing it. When someone has a different way of thinking, like someone without technical experience in a technical company. They bring fresh new ideas that can challenge the way things are done. Having diversity of thought is extremely important for progress and that is what non-technical sales and marketing managers can bring.

Just because you do not have a technical degree, does not mean you cannot learn from your work. The best managers have a passion for technology and an interest in learning. Many of the managers interviewed shared stories about how they learned on the job and in return, it made them better marketers. This is how non-technical managers can make up ground in such a complex industry. They can counteract technical deficiencies by partnering, having a mentor, or learning from Intel resources over time.

Success in sales and marketing is dependent on collaboration. This applies to a team that does not have the technical know-how or skills to complete a project. The best managers are not afraid to ask for help, they understand that they do not know what they do not know. Partnering is the best way to do this. Bringing in someone on a DOT assignment with technical experience or just sitting down with members of the product team can be the missing piece. This partnership starts with the manager being self-aware of themselves and their team.

4.3. Not Good Technical Sales and Marketing Managers

Contrasting with the first point of good technical managers where they bring an appreciation of the process that can save time in the future, bad technical managers inside of sales and marketing can become too tactical. Multiple respondents refer to this as "the weeds" where the manager's focus is too narrow for what the project demands. Others have seen technical managers not scale their work properly. This means they do not work out problems for the group, and their focus is too individual. They manage details on a small scale leading to inefficiencies.

Problems occur when managers do not view marketing as a separate role from other business sectors. When a technical manager does not see the value in non-technical knowledge, they leave out a very important component of marketing and sales. Poor managers in this field do not see the difference, and naturally, they hold technical knowledge at a higher priority. When the project does not demand technical process, this takes over soft skills like communication, creativity, and teamwork. Bad technical managers go against the natural realities of sales and marketing and reserve priority for what they are comfortable with.

Frustration can occur when technical sales and marketing managers do not see eye to eye with non-technical material. Often the content presented can seem like "fluff" because it lacks technical details. Technical managers do not realize that the person on the other end of a message may not need these details or would fail to understand them. This leads to bad technical marketing managers becoming unsatisfied with their team, especially non-technical members. Ending meetings with not only a miscommunication of sales and marketing material but also a divide within the team.

4.4. Not Good Non-Technical Sales and Marketing Managers

Intel is a company full of detailed processes. These ways are attested, skipping details can lead to miscommunication. A long email chain of stakeholders not understanding the process of a project can be an annoyance of technically minded people who are used to following details. This is a fault of some non-technical sales and marketing managers, they do not understand why steps are in place, so they skip these steps and try to save time. Going along with processes is essential to a project's full completion.

It has been mentioned before that Intel is very technically minded because engineers make up the bulk of the company. A critique of non-technical sales and marketing managers is that they cannot answer questions that require a technical answer. This was specifically pointed out when executives are exposed to a panel for open questions. Employees want to know what their leaders think. This disconnect does not serve well for the manager because they are expected to have opinions on the current state of their group. Some questions do not even require technical experience to respond intellectually, the question was asked so that they can understand what the future is.

Building on the last point, not having any technical knowledge can also hurt a team's credibility. Remember, technical training is not always a determinant of technical knowledge. People can be declared non-technical but still have the experiences to communicate with others on all matters. But if you have an entire team who thinks the same and have similar interpretations, there is no place for creative solutions because nobody has a different perspective. The credibility of a team can be hindered by having a manager that cannot explain complexities, especially to upper management.

4.5. Good Sales and Marketing Managers

Regardless of technical experience, the first thing that a good sales and marketing manager does is listen. Although it is simple, communication must go both ways. The best managers understand that their team has opinions, taking the time to listen creates a team environment. Many respondents said that they enjoyed having one on ones with their managers four or more times a year. Good managers understand everyone's career goals and want to help them succeed. Listening to each other and being open to all conversation leads to compatibility.

The flip side of being able to listen is being able to communicate. Being able to inspire a team with truth, value, and charisma is an art that all leaders strive for. Something respondents want more than anything is to have a constructive conversation and for their managers to communicate news in a positive manner. More specifically, people want a constructive conversation with their managers. They want to know how they are doing in the eyes of their superior, giving feedback whether it is good or bad.

The next thing that the best managers do is enable their employees for what they want to do. These managers have an outlook where if someone on their team wants to change careers or try something new that interests them, why stop them. If someone has goals and aspirations beyond their current position, it is the manager's responsibility to help develop them and give visibility for them to succeed. Giving growth opportunities, exposure to upper management, and developing goals are ways that good managers enable their team.

The best managers walk the talk as leaders. An inherent sense of mission mixed with charisma builds a team up. However they break up their work, every team has a plan. Some teams do this yearly, some work better on a quarterly basis depending on project size. Consistent planning that comes from a leader keeps teams on the same page and allows them to focus on results.

Jesus exemplifies many characteristics of a good manager. In Mathew 13, Jesus spoke to a crowd in stories and parables. Unlike the disciples who already had the knowledge to understand, this crowd needed things to be explained simply. Jesus was an expert in communication and understanding his audience. Every time he gave a speech, he would have a different crowd, and he always knew who was listening and what they needed to hear.

4.6. Not Good Sales and Marketing Managers

The first thing that bad sales and marketing managers do is set bad expectations for their team. This usually stems from misunderstanding the complexity of a project. Respondents felt they were not welcome and were not set up to succeed. The implications of not being realistic with business goals have extreme detriments to careers. These impractical expectations lead to the manager being unsatisfied and could advance to writing unfair reviews when it was not the team's fault.

Another problem with inadequate managers in this field is that they do not scale their efforts. Seeing everyone in your team as an individual is important on many levels. But there is a difference between seeing someone for who they are, and not having a view of the team's bigger picture. If a manager does one thing to help one person over and over, that is great. But doing one thing that helps everyone equally scales their efforts and leads to more efficiency. Poor managers do work by individual instead of ratios that have more influence for the team.

As mentioned before, good managers enable their team to do well in their careers; and having a healthy relationship with upper management can be a strength for teams. But it is obvious when a manager selfishly puts themselves first and only cares about their own career development. Respondents were quick to point out times they were let down. When the manager is only engaged in above, they lose trust from below. These types of managers do not give their team visibility, they always see it as a platform for themselves. They measure the team's success by their own achievement instead of a collective effort.

Lastly, bad managers lead by fear. This is often paired with unrealistic goals and unfair reviews. Leading by fear includes blackmailing and holding consequences over the head of employees. These managers fail to understand that people work better when they have freedom. Stress builds and people put up walls to protect themselves, leading to a poisonous work environment. Managers cannot force their teams to respect them, it must be earned.

4.7. Intel Sales and Marketing

Intel is going through a transition from being PC centric to becoming a data-centric company. This transition can arguably make Intel even more technically driven than it is. In response, there will be even more technical experts making the transition into sales and marketing. There are many different roles that range from technical sales enablement to corporate marketing and social media. Wherever an individual works on the sales and marketing spectrum, it is their job to communicate the value of breakthrough technical products. Taking complex information and making that simple and understandable for a variety of end customers. Understanding the audience and becoming customer-obsessed is something everyone can stand for, regardless of position or technical experience.

5. Conclusion

Whether you are technical or non-technical, you can be a good manager by listening to your team, having constructive conversations, giving enablement, and planning as a leader. Bad managers tend to be unrealistic, micromanage, selfish, and lead by fear. People do not leave jobs, they leave managers, and this model goes on to show how being technical or non-technical both have their advantages and downfalls. Good technical managers appreciate the process of a project but are also susceptible to becoming too tactical. Bad non-technical managers can lose credibility if they lack a technical perspective, therefore the best managers make up for this with partnerships. So, does technical experience translate to the sales and marketing field? The analysis shows that if the individual shifts their mindset and respects sales and marketing as a separate field, the transition should go smoothly. Jesus, who was a carpenter by trade, understood this mindset shift when he was preaching to the masses. Understanding technical language and product knowledge are valuable experiences that can be brought into a sales and marketing career but starting out with entry-level positions are recommended.

6. Future Recommendations

Construction, education, and other technology companies have a balance of technical and non-technical employees that can follow this method of research. Companies like Apple or HP could come up with different results because of separate company cultures. More research can be done by separating the sales and marketing disciplines. As many qualitative interviews as possible bring out the best results and can reveal more when coded.

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