

## Chapter 77

# A Comparative Analysis of Activity-Based Costing and Traditional Costing Systems: The Case of Egyptian Metal Industries Company

**Khaled Samaha**

*American University in Cairo, Egypt*

**Sara Abdallah**

*British University in Egypt, Egypt*

### EXECUTIVE SUMMARY

*Today, organizational environments are increasingly characterized by an expanding use of advanced technologies. A company's management accounting system should capture the underlying technology, be consistent with corporate commitment to total quality and increased automation, and promote its efforts to compete on the basis of cost, quality, and lead time. However, the recent literature reveals that traditional cost accounting systems systematically introduce serious product cost distortions, which lead to inappropriate strategic decisions. Activity-Based Costing (ABC) represents an alternative paradigm that is giving more accurate and traceable cost information. The objective of this case is to illustrate the application of ABC method in a single manufacturing organization operating in the metal industry and to compare the results of ABC with volume based costing (traditional costing) method. The results of the application highlight the weak points of volume based costing which assigns factory overhead costs using direct labor-hours or machine-hours as a cost driver. As a result, volume-based costing under-costs low-volume product (i.e. products requiring fewer direct labor hours in total), while it over-costs high-volume products (i.e. products requiring more direct labor-hours in total), and thus, a product is subsidized at the expense of others. In cost accounting this is called cross-subsidization. However, activity-based costing traces overhead consumption by each product and thus provides a more accurate per-unit overhead cost.*

DOI: 10.4018/978-1-4666-1945-6.ch077

## **1- ORGANIZATION BACKGROUND**

Egyptian Metal Industries Co. (Metalco), an ISO 9002 certified company, was established in 1987 as the first Egyptian manufacturing company in the field of 'Hot Water Boiler and Radiators'. With headquarters in Egypt, Metalco provides superior quality products, serving both the domestic and international sectors. After over 20 years of long experience, and being always on top of all forms of new scientific improvement and technical developments, its research and development teams were able to further improve the production of hot water boilers to a more practical and higher efficient 'Hot Water Boilers', while maintaining the superior quality and designs that Metalco associates its name with. These new hot water boilers were given a new brand name "*Kinz*" which translates to the word "Treasure".

Heat exchangers are common components in many of the everyday devices. Central heating boilers and radiators all contain heat exchangers. Their purpose is to transfer heat from a hot liquid or gas to a colder one. In industry, steam is often used for heating and cold water for cooling. A variety of heat exchangers have been designed to suit the range of heating or cooling applications. Boiler and radiator heating systems are already green in many respects, since they are one of the cleanest heating systems around when it comes to fostering good indoor air quality - a big plus in green remodeling circles. Nevertheless, boiler or radiator heating system can still benefit from going green, especially when it comes to reducing the heating costs and improving the energy efficiency.

In 2005, the total world domestic boiler market was estimated at \$ 10.9 billion and 10.46 million units, while it is expected to grow at a moderate rate over the next few years. The United Kingdom is the biggest market in both value and volume terms, followed by South Korea and Italy. Growth rates vary significantly between countries, with smaller markets generally offering higher growth potential. These are found in North Africa, the

Middle East and Central Asia, with double-digit growth forecast in Kazakhstan, Tunisia, Morocco, Jordan and Turkey up to 2010. The growth expected in these markets occurs from a low base.

Today, Meltaco Company is one of Egypt's most mature manufacturing sectors operations, exclusively distributing and servicing more than 70,000 clients both in Egypt and in the world. Meltaco's goal is to exceed the expectations of every client by offering outstanding customer service, increased flexibility, and greater value, thus optimizing system functionality and improving operation efficiency. Meltaco associates are distinguished by their functional and technical expertise combined with their hands-on experience, thereby ensuring that our clients receive the most effective and professional service. Meltaco Company's policy is to provide a culture of continual improvement that is committed to exceed Customer expectations and requirements, by providing products and services of excellent quality. Customer support is number one at Meltaco Company

Meltaco Company is caring to develop its employee's staff and provide them with good work environment to achieve its goals and to maintain highly regarded performance level. Currently, it has a staff of 10 managers and 50 professionally trained maintenance personnel available 24 hours a day, 7 days a week to service all clients' needs. The company offers many different service plans. Meltaco's professional sales staff would assist the clients in choosing the best system of boilers or water heaters to meet their specific needs. The company warranties all its equipment, installation and spare parts. Customers are welcome to stop by the Spare Parts Department. While there, the company's professionally trained personnel will consult with each client to find the spare parts and equipment they need for their operation.

Meltaco produces a wide range of hot water boilers, including residential boilers, commercial boilers, swimming pool boilers, water heaters and laundry equipments. The most significant highly

10 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/chapter/comparative-analysis-activity-based-costing/69348](http://www.igi-global.com/chapter/comparative-analysis-activity-based-costing/69348)

## Related Content

---

### A Production Planning Optimization Model for Maximizing Battery Manufacturing Profitability

Hesham K. Alfares (2012). *International Journal of Applied Industrial Engineering* (pp. 55-63).

[www.irma-international.org/article/production-planning-optimization-model-maximizing/62988](http://www.irma-international.org/article/production-planning-optimization-model-maximizing/62988)

### The Self-Regulatory Focus as a Determinant of Perceived Richness of a Communication Medium

Vicenc Fernandez, Xavier Armengoland Pep Simo (2012). *International Journal of Applied Industrial Engineering* (pp. 1-9).

[www.irma-international.org/article/self-regulatory-focus-determinant-perceived/62984](http://www.irma-international.org/article/self-regulatory-focus-determinant-perceived/62984)

### Robust Fault Detection Based on State Observers for Networked Control Systems

Zhang-qing Zhuand Chunlin Chen (2010). *Intelligent Industrial Systems: Modeling, Automation and Adaptive Behavior* (pp. 346-386).

[www.irma-international.org/chapter/robust-fault-detection-based-state/43639](http://www.irma-international.org/chapter/robust-fault-detection-based-state/43639)

### Using Serious Games for Collecting and Modeling Human Procurement Decisions in a Supply Chain Context

Souleiman Naciri, Min-Jung Yooand Rémy Glardon (2013). *Industrial Engineering: Concepts, Methodologies, Tools, and Applications* (pp. 744-765).

[www.irma-international.org/chapter/using-serious-games-collecting-modeling/69313](http://www.irma-international.org/chapter/using-serious-games-collecting-modeling/69313)

### Integration of Demand-Side Management Programs and Supply-Side Alternatives for Decentralized Energy Planning: An Analysis of Energy Import and Export Effects

Masoud Rabbaniand Mahdi Dolatkah (2016). *International Journal of Applied Industrial Engineering* (pp. 37-54).

[www.irma-international.org/article/integration-of-demand-side-management-programs-and-supply-side-alternatives-for-decentralized-energy-planning/159084](http://www.irma-international.org/article/integration-of-demand-side-management-programs-and-supply-side-alternatives-for-decentralized-energy-planning/159084)