MUNHUMUTAPA SCHOOL OF COMMERCE

Department of Management Studies

BACHELOR OF COMMERCE PART 1SEMESTER 2

MODULE NARRATION: SUPPLY CHAIN MANAGEMENT

SPECIAL PAPER

CODE:	**HLT211**
DATE	**SEPTEMBER 2024**
DURATION	**3½ HOURS**

ANSWER ALL QUESTIONS FROM **SECTION A** AND ANY **THREE (3)** FROM **SECTION B.**

QUESTION ONE (1) CARRIES **40MARKS** AND ALL OTHER QUESTIONS CARRY **20 MARKS** EACH.

AS MUCH AS POSSIBLE CITE RELEVANT EXAMPLES

SECTION A

CASE STUDY: Dell using the Supply Chain to Compete

QUESTION 1

1.1 Evaluate Dell's SCM strategies used in this case study **[15marks]**

1.2 Demonstrate Dell's SC responsiveness with the use of SC drivers:

1.2.1 Facilities [6 marks]

1.2.2 Inventory [4marks]

1.2.3 Information [4marks]

1.2.4 Transport [4marks]

1.3 Discuss how Dell can improve its (BTO) supply chain by adopting postponement **[7Marks]**

SECTION B

QUESTION 2

Discuss the five stages of supply chain evolution (should show dominant features for each stage), contrasting yesterday, today and tomorrow supply chains. **[20marks]**

QUESTION 3

Using John Mentzer, et al, (2001) discuss the concept Supply Chain Management. **[20Marks]**

QUESTION 4

Discuss the concept of supply chain competition using the following guides:

4.1.1 Forms of supply chain competition. **[4 marks]**

4.1.2 Sources/bases of Supply Chain competitive advantages (use SC theories to discuss this). **[8marks]**

4.1.2 Supply Chain capabilities and competencies they compete on. **[8marks]**

QUESTION 5

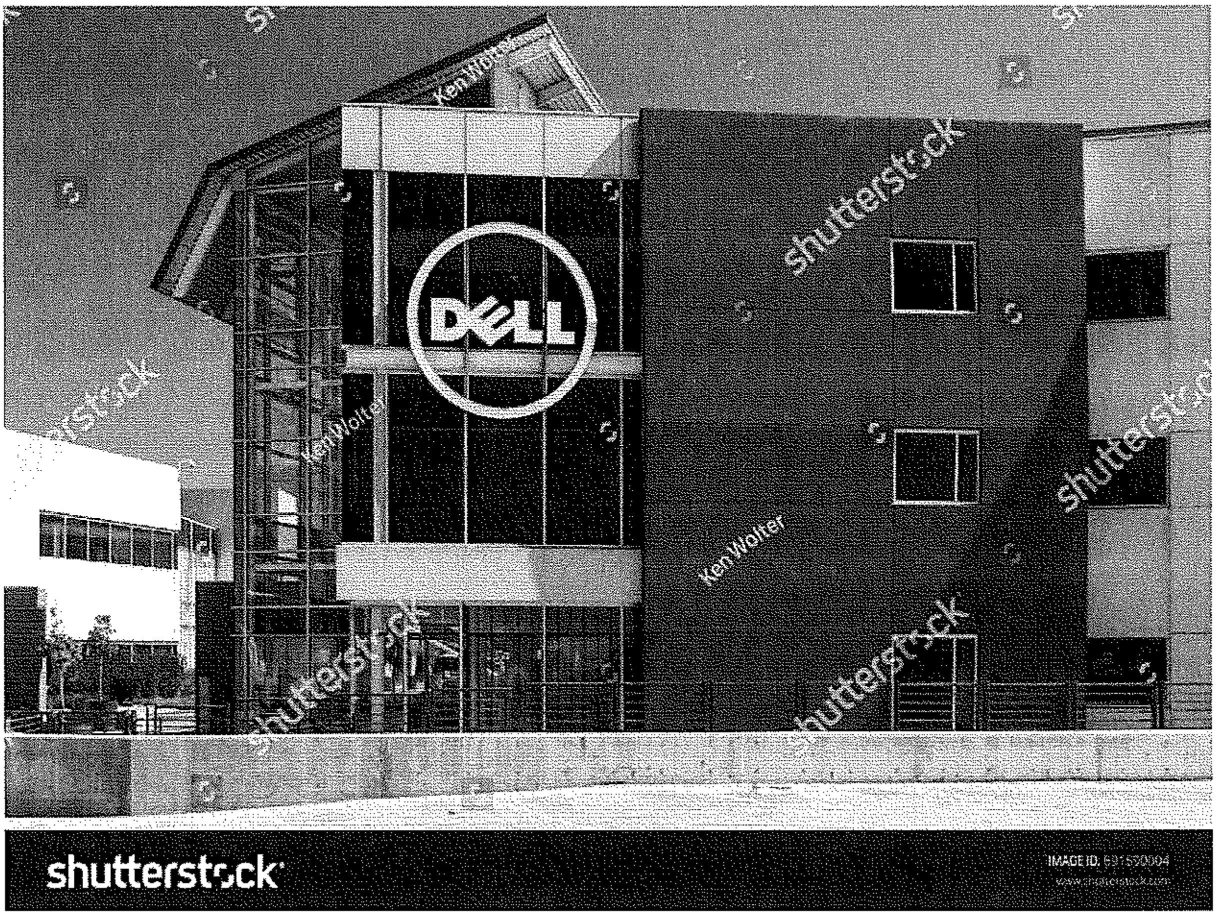
Discuss the concept of Supply Chain Collaboration (SCC) demonstrating its practical application to a Zimbabwean firm. [20marks]

QUESTION 6

6.1 Discuss the concept Demand Driven Supply Chain (DDSC). [8marks]

6.2 Examine the main features and capabilities a Demand Driven Supply Chain should posses. [12marks]

Dell: using the supply chain to compete



The personal computer (PC) sector was still in its infancy when, in 983, medical student Michael Dell began buying up remainder stocks of outdated IBM PCs from local retailers.

Dell upgraded the machines in his college dorm, and then sold them on at bargain prices to eager customers. Dell abandoned his studies soon afterwards to concentrate on his growing computer business. By 1985 Dell Computer had switched from upgrading old IBMs to building its own machines. Even then, Dell was different from other computer manufacturers of its day. The machines themselves were technologically unremarkable, but it was the way in which they were sold – directly to the customer – that gave the upstart company a unique advantage over established PC makers.

Dell's business model

While the industry leaders vied to introduce PCs with ever faster and more impressive technology, they gave little consideration to the mundane business of supply chain management. The computers they produced were invariably made-to-forecast and because of the way they were sold – through shops, resellers and systems integrators – were then destined to languish for an average of two months in warehouses or on shop shelves before being purchased by a customer. In doing so they exposed their makers to the inherent double jeopardy created by the dynamics and economics of the industry. Firstly, component costs have been falling since the industry's inception; particularly the all-important processors that had fallen in price by an average of 30 per cent per year. The longer these components wait to be sold, the worse value they become. Historically, component costs accounted for around 80 per cent of the total cost of a PC. Secondly, there is the risk that a step-change in technology may make millions of dollars' worth of finished product obsolete overnight, forcing manufacturers to compensate
resellers for unloading stocks at a loss. By selling directly to the customer Dell was able to configure and assemble every PC to order, which in turn enabled it to maintain its cost advantage over conventional rivals. Dell's low-priced machines
with their bespoke configuration were an attractive option for customers who were confident enough to buy direct. Nevertheless, for many years received wisdom in the industry considered Dell to be nothing more than a successful niche player. It was widely believed that the majority of business-to-business customers, and indeed consumers buying PCs for the home, would always prefer to purchase their equipment through traditional channels. Distributors and retailers would reassure the customer that help would be at hand should something go wrong. Moreover, consumers could see and touch the products before purchase. In the early 1990s Dell embarked on a brief flirtation with conventional retail distribution channels in a bid to break out of its perceived niche. The move was a mistake. Retail sales plummeted as soon as Dell offered a new PC through its direct channel. Dell was obliged to compensate the retailers for their losses. As a result, the company posted its first ever loss ($36m) in 1993. The ill-judged foray was a salutary lesson in the perils of attempting to operate through conflicting distribution channels and a vindication of its original low-cost direct sales strategy. Dell pulled out of the retail market in 1994 and retrenched with a vengeance, rebounding immediately with profits of $149m. From this point on Dell concentrated on finding ways to leverage the strengths of its original direct sales strategy. The arrival of the Internet offered Dell the opportunity to develop an even more cost-effective version of its direct-sales approach. The company was not the first PC retailer to venture into cyberspace, though no other manufacturer was better placed to make such a move. Within six months of opening for business through its website, Dell was clocking up Internet sales of $1m per day, with sales through the channel growing by 20 per cent per month. Far from remaining a small niche option,

direct buyers soon accounted for a third of all PC sales in the US, up from only 15 per cent in 1991. Not more than 36 hours after placing an Internet order, customers' bespoke PCs trundled off the production lines and onto delivery trucks. In fact more than 80 per cent of Dell's orders were built, customized and shipped within eight hours. More time was spent testing the machines and loading software than actually assembling them. For most direct-to-customer sales Dell could expect to see payment within 24 hours of order placement, while Compaq (global market leader at the time) had to wait around 35 days for payment through primary dealers. Even other direct sellers were apt to take over a fortnight to convert an order in cash. Dell's own operations continue to be constantly re-examined to squeeze every possible moment of non-value-adding time out of procurement and assembly processes. As a result, the total number of interventions or 'touches' involved in the manufacture of a Dell PC has been reduced to 60, against an industry average of around 130. The simplification is facilitated in part by Dell's focus on common components and, from the late 1990s, the formation of long-term relationships with suppliers, including competitors such as IBM and Toshiba. On the inbound side too Dell works to minimize inventory and increase return on capital employed. Many components are not ordered from a supplier before Dell receives a customer order. To achieve such levels of co-operation and integration, Dell progressively reduced its number of suppliers from 204 companies in 1992 to just 47 by 1997. Numbers would eventually rise to above 1992 levels as product ranges expanded, but by 2003 around 30 suppliers provided 75 per cent of Dell's direct material purchase. Most of the company's suppliers maintain eight to ten days of inventory in vendor warehouses located not more than 15 minutes away from Dell's own factories in Texas, Ireland and Malaysia. The company decided that it was preferable to source from suppliers close to its plants, rather than from more distant offshore locations, even though local manufacturing costs may be higher. IT links with key suppliers allow Dell to schedule production lines in its factories every two hours. We have no inventory and no warehouses in any of our factories. Instead, we're able to pull material into our factories based on actual orders ... We literally push a button and two things happen. We lock in the schedule by actual order and order number into the factory. At the same time we send a message over the Internet to our third-party logistics providers, supplier's logistics centers or hubs. Suppliers have 90 minutes to pull material off the rack and deliver it to Dell's factory door. Suppliers have access to hub-level inventory holdings and are responsible for restocking the hubs and delivering to the factories on a consignment stock basis. Bulky finished subassemblies, such as monitors and speakers, are treated differently. Instead of shipping them to Dell's factories, they are sent directly to the customer from the supplier's hub (located close to the market rather than close to Dell's factory), saving Dell approximately $30 per item in freight costs. Dell is billed for the components only when they leave the supplier's warehouse in response to a customer order. The supplier receives payment approximately 45 days later. Dell endeavors to dual source most of its components, but single sources some items, such as chips from Intel. Where essential components (such as disk drives) cannot be sourced or assembled as quickly as the computers could be bolted together, Dell works with suppliers to shorten their own lead times or improve forecasting. Dell's own forecasts are posted on its extranet. Fortunately, demand for components is much more predictable than demand for finished goods, though shortages of some critical components (most notably microprocessors) can be a problem across the industry. Here again, the direct sales method placed Dell at an advantage over those makers who used traditional routes to market. Because Dell communicates directly with its customers, it is able to shape demand by steering customers towards configurations using readily available components. The model enables Dell to carry only four days' inventory, while many of its competitors continue to hold between 20–30 days worth.

Twenty-first century price wars

Dell's mastery of its own business model allowed it to grow at a rate that was more than three times the industry average throughout the 1990s. By the end of the decade it was challenging global market leader Compaq to become the world's biggest PC maker (by unit sales). Importantly, Dell's operating margins had been maintained regardless of relentless downward pressure on prices. However, things seemed to take a dramatic downturn in February 2001 when Dell revealed its fourth quarter results. The announcement was accompanied by the news of the first ever redundancies in its 16-year history: 1700 jobs, accounting for 4 per cent of its workforce, were to go immediately. Some analysts had seen it coming, others scurried to investigate. In the US, still home to more than 70 per cent of its business, demand for Dell's core product – the mid-range office desktop – was
weakening. Michael Dell maintained his stance that reports of the death of the PC were exaggerated. Nevertheless, it was clear that demand for PCs had fallen sharply after a pre-Y2K boom in sales. Across the industry manufacturers were suffering a post-millennium hangover and everyone was feeling the pinch. To the alarm of its competitors Dell resorted to slashing PC prices in a bid to increase its share of the US market, a region where its rivals were already struggling to turn a profit. Dell went on to announce a further 4000 redundancies in May 2001 as the industry descended into a full-blooded price war. There was speculation that Dell might be prepared to lower its margins as far as 3.5 per cent, pushing most of its rivals well into the red.

IBM's PC unit was already making a loss but, being focused on the corporate market, it was managing to claw back margin on its service packages. For the smaller players, the future looked bleak. Some, such as Micron Electronics, had already bailed out of the PC sector, while others were to do the same before the year was over. Meanwhile news of an impending merger with Hewlett Packard damaged Compaq's sales, apparently allowing Dell to capitalize on confusion in the marketplace. It gained a 31 per cent share of the US market at the expense of its nearest rivals. Despite the aggressive price-cutting, analysts believed that Dell had managed to maintain margins of around 7 per cent,6 but in the post-Enron and post-9/11 malaise Wall Street was nervous. There were whisperings that Dell might be too aggressive in its accounting practices and rumours that it made suppliers hold back inventory at the end of a quarter to improve its figures.7

I'm not going to suggest that there couldn't be incidents where we did things that could appear like that ... but on a broad scale, no, that do not reflect our activities at all.

Michael Dell8

The merger between Hewlett Packard and Compaq had been designed to protect their evaporating margins, but post-merger integration did not go smoothly. Outside the US efforts to cut costs through rationalization across the two companies repeatedly fell foul of labour and tax laws or systems requirements in other national markets, while in the US the newly combined group found that Best Buy, the largest retailer of Hewlett Packard

PCs, was keen to restrict shelf space for the new giant, fearing that the enlarged company could wield too much power.
Hewlett Packard and other established industry players had repeatedly tried to improve their own cost structures by emulating Dell's direct sales formula, but many retreated after running into the same channel conflicts as Dell had encountered with its foray into retail sales.

New territories

By November 2001, Dell was undisputed leader of the still contracting global PC market, but analysts were anxious about Dell's dependence on its depressed domestic market. The company had been expanding overseas for some years but had struggled in Europe; particularly in Germany where it had experienced great difficulty in establishing a management team schooled in and capable of delivering the Dell model. In terms of market share, it had latterly managed to improve its position, but continental Europeans did not embrace the direct sales model as readily as their US and British counterparts. By 2001, more than 50 per cent of UK
Companies were buying hardware online; in Germany only 27 per cent did so, while in Italy online buying was as low as 17 per cent. A report by independent technology analysts Gartner Dataquest, in the third quarter of 2001, showed that demand for PCs across continental Europe was down 11 per cent on the previous year. Amongst the top five vendors, only Dell had achieved growth, up 5.6 per cent. Compaq (still European market leader) had recorded a fall of 18.8 per cent.
We are number one in the world, but have only 13% of the market after year-on-year of aggressive growth ... Michael Dell has stated he wants 40% market share worldwide, so we are not going to ease off ... At a minimum we are aiming for 25%. It will take several years to get there. Without changing the business model, Dell's target is unrealistic. The rate of growth is dependent on the rate of change in the business buying culture. Dell has already cornered around half of the direct sales business in Europe, so the propensity to grow is limited by the overall size of the direct market ... Dell's Anglo-Saxon model has mapped most readily to the UK and Australia. But Dell could find it can't colonize the world without taking on the cultural peculiarities of those continental European countries. Internet sales had risen in Europe and in Asia as the 1990s drew to a close, but analysts still wondered whether Dell was being overambitious.
To achieve such total worldwide domination of the PC market and *keep* it Dell could not ignore China. Dell first established an assembly operation making 'Smart PCs' in China through a Taiwanese contractor. In 2002 it began making them itself in its own factory in Xiamen in southern China, but once again Dell would have to risk a departure from its proven business model. China lacked the direct marketing infrastructure, high levels of Internet usage and automated payment systems that made Dell's direct sales model workable elsewhere. Instead Dell produces low-cost standardized products in Xiamen. The Smart PCs are shown to would-be customers by sales teams in shopping malls in the wealthier Chinese cities. Customers can touch and see the product before ordering by phone, with payment on delivery or by arrangement through local banks.

Beyond PCs

By 2001 Dell was not only the leading PC maker worldwide, but it had risen to become the leading supplier of servers in the US. Nevertheless, 83 per cent of Dell's revenues still came from desktops and portables. In the harsh economic climate of the day observers continued to question whether Dell had the vision, products and skills to remain competitive in the twenty-first century. Could it survive in an age when attention was turning towards innovative non-PC devices?

Could the root of Dell's success – its ability to customize and deliver otherwise standardized desktop computers – now be its downfall? People are more concerned with what it takes, for instance, to download MP3 music files and burn their own CDs than they are with what kind of computer they use to do it. Meanwhile many corporations now provide workers with a new PC every four years – up from every three years, which had been standard practice. The PC business has been about products, feeds and speeds. Now customers don't give a rat's ass about how fast the processor is. The issue is, 'How do I get stuff done with my computer?' Much of the real action in the industry appeared to be in the markets for wireless networks and hand-held computing, but Dell appeared to steer clear of these new exciting opportunities. Instead it started to diversify into low-cost storage and networking support where it had high hopes of growth in the European, Middle Eastern and African (EMEA) markets. We need to keep the financial health strong by diversifying ... Our job is not to stake our future on the big grey desktop ... We are looking to double storage revenues across EMEA next year.

In March 2002 Dell announced an alliance with Philips, Europe's biggest supplier of consumer electronics. Philips would supply cathode ray and flat screens or semiconductors to some Dell suppliers. It would also provide rewritable disk drives and wireless technology. In exchange, Dell would supply servers and workstations for internal use by Philips. It would also carry some Philips products on its website, giving the Dutch brand visibility in the US, a market where it had long struggled to establish a profitable presence. Elsewhere, despite the calls for diversification, Dell's plans to build its networking business provoked the same old responses from its critics. Once again there was speculation that without intermediaries Dell would be unable to meet the service requirements of the sector. Yet again Dell went on to confound its critics, developing its service offer through partnerships with leading service suppliers such as EDS. Consulting services were becoming a critical factor in many large corporate account bids, but Dell signalled that it would not be putting significant resources into building its own services capability as IBM had done. It was far more interested in the less glamourous peripheral hardware products, such as the switches that connect small- and medium-sized computer networks, and storage to support low- to medium-powered servers. Margins were high in both sectors, up to 50 per cent in switches. Other niches were also attracting Dell's attention. In 2003 Dell unveiled its first range of printers. Its share price rose by 1 per cent on the day, while Hewlett Packard's dropped by the same amount. Soon afterwards, the launch of its first hand-held computer was received with news that market leader Palm would be merging with its rival Handspring. By now a distinct pattern was emerging. Dell was picking off high-volume, high-margin categories of PC-related hardware. It was doing so once industry standards had emerged, which in turn signaled to customers that the item was becoming a commodity. Commodities are fair game for price competition, the very thing Dell's competitors fear most!

References

1. *The Economist*, 'Dell Computer: Selling PCs like Bananas', 5 October 1996, p. 99.

2. Serwer, Andrew E., 'Michael Dell Turns the PC World Inside Out', *Fortune*,8 September 1997, pp. 38–44.
3. McWilliams, Gary, 'Whirlwind on the Web', *Business Week*, 7 April 1997, pp. 132,134, 136.