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Updated on Sunday, May 4, 2025

HBR Business Model

Harvard Business Review "How to Design A Winning Business Model" Pages 101 - 107
By Ramon Casadesus-Masanell and Joan E. Ricart January - February 2011 issue

As I read this HBR article, I began thinking about how the Quad-Generation company would fill in the blanks for these three business models. After reading each person's definition of what a business model is, I sat down and wrote the Quad-Generation concept in that person's frame of reference. Finally, I blended all three definitions into my own words.

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> What is a Business Model, Really?
> "Everyone agrees that executives must know how business models work if their organizations are to thrive, yet there continues to be little agreement on an operating definition. Management writer Joan Magretta defined a business model as "the story that explains how an enterprise works,...."

The Story

The quad-generation enterprise provides end users with energy-saving air conditioning, space heating, hot water, dehumidification, refrigerator assistance, and financing for ten years. The ten-year agreement also includes 24/7 remote monitoring, repair, and service. The enterprise makes money from the monthly fee paid by the homeowner after they place a nominal $1,000 down payment. There are two company investments. First is the equity investment to get the company started. Second, various "bond" funds allow equipment purchase, assembly, and installation. The bonds are paid back with monthly checks that equate to …. maybe the stock market plus 2% guaranteed – just thinking out loud here.

The knowledgeable customer could invest $10,000 and enjoy a 40% return by converting to a natural gas-fired quad-generation unit. They would pay 20¢ on the $1.00 compared to the conventional electrical air conditioner. However, they lack the knowledge to know if their house is a good candidate for such a system, which involves engineering analysis and economic screening.

They can not build quad-generation units because they need to gain engineering knowledge, air conditioning installation and maintenance experience, knowledge of engines, controls, computers, and electrical expertise to assemble a unit, which is the proposed invention called

quad-generation. They also need spare money for such an ambitious capital investment and understand the cash flow and economics of performance contracting, which is the investment delivery model.

Once installed, they cannot monitor or repair the unit, which is the leasing/maintenance aspect of the ten-year agreement. The quad-generation enterprise bridges all these gaps by leasing the unit to the homeowner for ten years and providing them with 20% of the overall savings. The quad-generation company retains 80% of the savings for company cash flow, payback of the fund investors, and, ultimately, profit. The units are owned and depreciated by the company during the ten-year agreement.

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What is a Business Model, Really? (Continued)
"....., harking back to Peter Drucker, who described it as the answer to the questions: Who is your customer, what does the customer value, and how do you deliver value at an appropriate cost?"

Peter Drucker- three questions

Who is your customer? The homeowner is the customer who uses and pays the monthly bills for the Quad-Generation unit. The bank or the "bond" investor is the customer who fronts the money and enjoys a monthly return on an asset-based investment for ten years.

What does the customer value? The homeowner is currently paying a high electric bill for using his air conditioner, which here in Florida is greatly valued, and some say it is a necessity. The customer values comfort in low humidity and moderate temperature, pegged at 50% relative humidity and 75°F temperature according to the "Comfort Zone." In comparison, the Florida environment is 85% plus humidity and 90°F temperature. The bank – in this case, the "bond" investor - values investment in real tangible property that generates a constant monthly cash flow return.

How do you deliver value at the appropriate cost? Value has several viewpoints. To the general contractor, it is the lowest cost equipment, and you can't get equipment that is lower than leasing for a nominal $1,000 investment. For replacing an existing unit, bids obtained by the homeowner would once again reveal leasing as the lowest-cost option. For upgrades or energy efficiency improvements, the natural gas-fired leased unit is the economic winner based on life cycle cost and is again the low-cost bidder. The owner can enjoy savings and 24/7 remote monitoring, repair, and service without considering the high cost of a conventional electric a/c.

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What is a Business Model, Really? (Continued)
"Other experts define a business model by specifying the main characteristics of a good one. For example, Harvard Business School's Clayton Christensen suggests that a business model should consist of four elements: a customer value proposition, a profit formula, key resources, and key processes..."

Clayton Christensen - four elements

The customer value proposition is as follows: How would you the homeowner/customer like to reduce your monthly electric bill by 50% to 70% or more and enjoy more and better air conditioning? Do you want to cut your carbon footprint in half? Would you like to lease new quad-generation equipment for a low monthly fee over ten years rather than just a three-year commercial loan for a typical air conditioner? Would you like better humidity control and more comfortable house temperatures for 80% less than you are paying now?

Your air conditioner broke down, and you need more cash to purchase a new unit without taking out a loan. However, have you considered leasing a quad-generation unit for over ten years with low monthly payments? Would you like to have your air conditioner monitored via the internet 24/7? Would you like the service person to show up when the remote monitoring reveals a problem?

The profit formula is derived from the difference between electricity and natural gas costs. This is also called the spark gap and indicates the feasibility of investing in cogeneration equipment, or in this case, investing in the quad-gen unit at a specific address. It is also a function of equipment efficiency, house size, and air conditioning run hours. Some homes would not be a good fit, while others would greatly surpass the minimum investment threshold. This spark gap is used by Energy Service Companies (ESCO) that purchase, install, and monitor new high-efficiency air conditioners in large commercial buildings and schools nationwide.

The customer makes monthly payments to the Quad-Gen company to cover the lease, 24/7 monitoring, service, repair, "bond" holder payback, and company profit. Hot, humid Gulf state homes are ideal candidates for the quad-generation unit because they have long run hours, expensive electricity, and an excess and cheap summer natural gas supply from the local natural gas utility, which, by the way, has an incentive to sell natural gas in the summer.

Essential resources include natural gas supply, equipment availability, sound, talented, and trained people, and homes that need and want efficient and cost-effective space conditioning.

Key processes would include marketing, technical screening for home energy usage, background screening for the owner's credit history and existing liens on the house, the ability to attach a new equipment/mechanic lien, assembly of units, installation of units, monitoring, and maintenance of units.

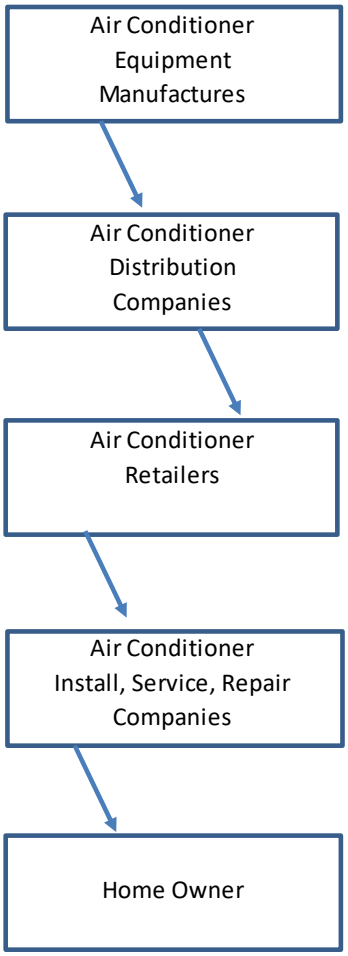
Eric H Coffin – business model

The quad-gen company seeks to enter and disrupt several existing money-making industries to bring value to the customer and make money for the company and investors. These industries include air conditioning manufacturers, electric generation companies, banking, and natural gas companies (from drilling to processing, transmission, and distribution).

The natural gas industry will be pleased with summer gas sales, but the electric companies will not be happy about losing some summer load. However, environmentalists will be pleased with less coal burning and a lessening of the electric grid congestion. In fact, with widespread quad-

gen adoption, the need for improvements to the existing electricity distribution system will diminish. As with all businesses, quad-gen will have allies and enemies.

Air conditioner equipment manufacturers like Trane, Carrier, York, etc., profit by producing equipment and selling it to distribution companies. Distribution companies make money when they sell units to area retailers. The area retailers make money selling one specific unit to an air conditioner service company. Air conditioner service companies like Cox, Climate Design, and Air Quality Control profit from the homeowner by installing, servicing, and maintaining the system.



This "daisy chain" of sales permits each company to profit. Assuming the AC costs $1,000 to build and each company adds a 20% profit, the homeowner pays $2,075 for just the equipment. Since quad-gen is forecast to begin in West Central Florida, this entire manufacturing installation will be done in-house. When the company expands to the rest of Florida and Gulf Coast states, this one company will need to be revised to include others in manufacturing, installation, and service.

This is a link to a YouTube video explaining "How it's Actually Made—Air Conditioners."

https://www.youtube.com/watch?v=ABfD8f6ixuQ&ab_channel=Huggbees

Or you can type the title into Google, which will take you to this 4:45-length story. The narrator is quite funny.

As you can see in the video, the equipment used to make an air conditioner is relatively small and inexpensive in tooling.

Home security companies like ADT, Honeywell, Sonitrol, and others profit by providing in-home electronic equipment and 24/7 monitoring.

Banks make money by lending to homeowners and collecting the interest on the slowly repaid principle. Energy Service Companies (ESCO) have used performance contracting for years to make money. The ESCO does the energy audit, buys and installs equipment, and is paid back by the electrical savings. The quad-generation company earns a profit by performing all these functions of manufacturing, installing, service, maintenance, monitoring, and loans.

Electricity generating companies will lose some of their summer load as quad-gen takes root, and given their enormous size, they may notice the load loss for a while.

Natural gas companies will welcome the sale of summer gas to make a profit from pipes already installed in the ground.

While natural gas air conditioning is well known in Japan, its adoption in the US has been almost zero. This is partly due to the high sales costs, the need for trained installers, and the absence of service and repair personnel. Moreover, those companies that tried to sell natural gas air conditioning quickly exited the market when sales did not meet management's short-term goals.

In Japan, which imports almost all its fuel and is the world's largest natural gas importer, the local gas companies install and maintain the AC units. Talk about an incentive – get fix, need sell gas, hurry. My version of a Japanese person's excitement about a faulty AC unit.

Thank you in advance for your HELP…….

Sincerely,

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