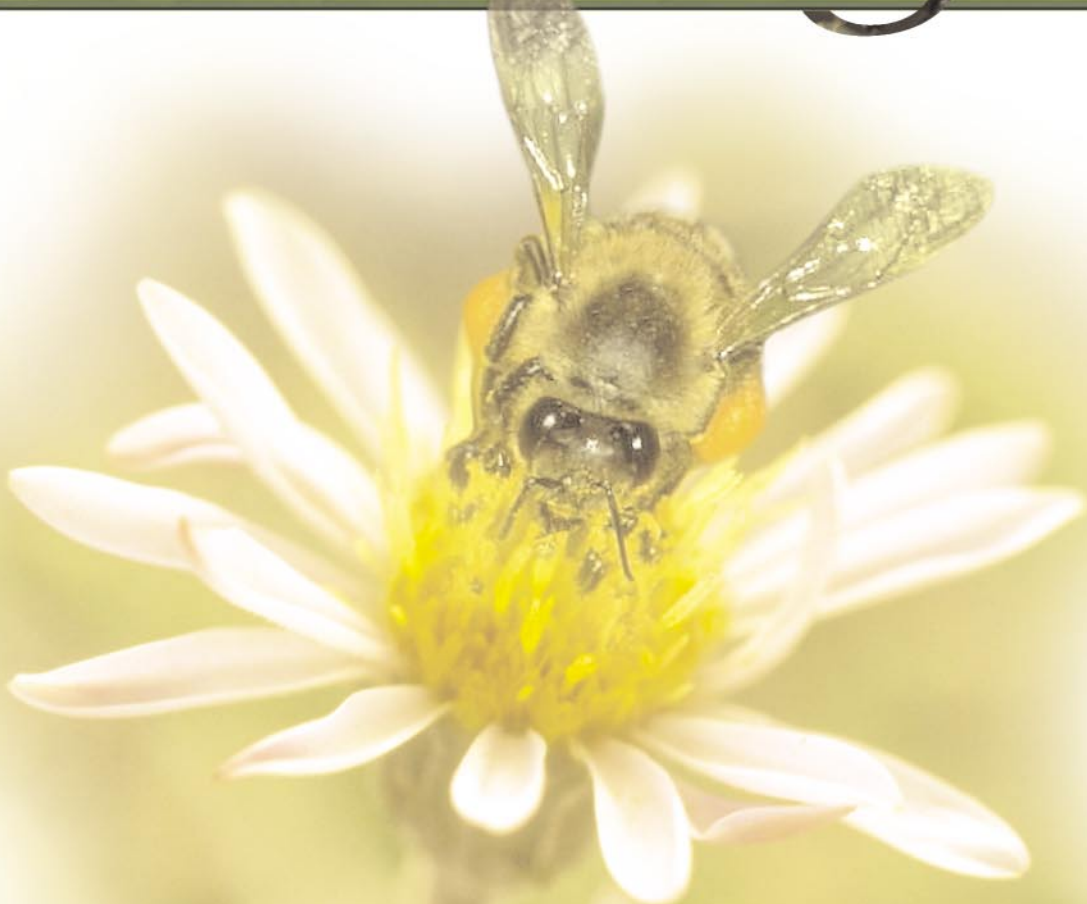


PilotLight

Four Seasons
CONTROLLED CLIMATES LTD.

A newsletter for the valued customers of Four Seasons Controlled Climates

Spring 2000



Outsourcing:

Utilizing the skills of outsiders to accomplish your objectives.

- **Aerospace giant recoils after meeting Four Seasons**
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Local aerospace giant recoils after meeting Four Seasons

Orenda Aerospace has been advancing the technology of gas turbine aircraft engines for over 50 years from their facility situated beside Toronto's international airport. This is the same facility where Orenda designed and built the famous PS-13 Iroquois engine beginning in 1953. The P-13 Iroquois was the engine of choice for the highly-advanced but ill-fated Avro Arrow (Mark 2) considered by many to be the greatest plane that almost was. Most Canadians are familiar with the Avro Arrow project which represents perhaps both the highest and lowest points in Canadian aerospace history.



The Arrow may be no more but the massive Orenda plant continues to whirl with activity. Today Orenda manufactures engine components including compressor discs, nozzles, turbine wheels, bearing housings, de-swirls, torque rings, combustion liners and casings. These parts are supplied to major OEMs for the manufacturing of jet engines and other types of aircraft engines.

While the topic of jet engines can be fascinating, our story concerns equipment that is also designed to move large volumes of air but is very different, namely the facility's air handlers. The air handlers supply the conditioned air that keep the plant cool in summer and warm in winter. The components (filters, coils, blowers) that make up the air handlers at Orenda are so massive they are actually enclosed in rooms large enough for people to walk through.

These air handler rooms are located just below ceiling level, high above the plant floor. Each air handler consists of a bank of filters, backing up against a wall of cooling/dehumidification coils which are separated by a walkway from a wall of heating coils. Two massive, powerful fans are responsible for pulling air through the filters and coils and blowing the conditioned air to the plant below. A typical air handler in the facility has a cooling capacity of 80 tons. By comparison, the average home air conditioning system is rated at about 2 tons. These things move air, and lots of it.

Recently, one of the air handlers in the time-honoured facility was showing definite signs of aging. After so many years in service, corrosion was starting to get the better of the large cooling/dehumidification coils and drain pan. The deterioration of the metal had allowed the system to leak water that several times had flooded the floor of the air handler room. Furthermore, as a result of the condition of the cooling/dehumidification coils, the air handler was no longer able to adequately provide the proper amount of cooled air for its target area of the plant. Though repairs to the drain pan extended the usefulness of the air handler for a short time, Orenda wanted a long-term solution.

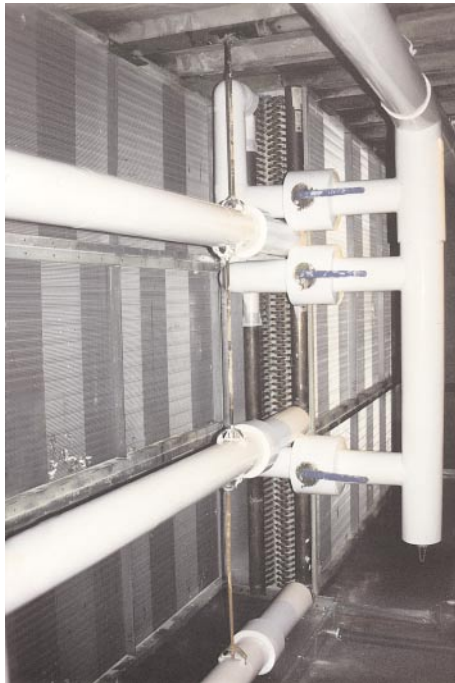
After assessing the situation it was decided that the best solution was to completely replace the cooling/dehumidification coil subsystem. The existing

wall of coils was disassembled and replaced by six new cooling/dehumidification coils designed specifically for this application by Four Seasons Controlled Climates. The coils were arranged two across and three high.

Four Seasons also designed and installed a new chilled water distribution system. The distribution system takes chilled water supplied by a chiller located in the plant below and distributes the water to the cooling/dehumidification coils. The steel distribution pipes which carry the water were wrapped in special-purpose insulation and encapsulated in PVC tubing. This design should greatly improve system efficiency and increase the life of the distribution system by preventing condensation from forming on the pipes and preventing corrosion. Special water-balancing valves were added to further control the distribution of water, ensuring equal amounts of water are supplied to each coil.

Next, Four Seasons designed and installed a condensate collection/drainage system for the coils. A condensate/drainage system is needed because as the supply air passes through the cooling/dehumidification coils, not only is heat removed but moisture is removed as well. The moisture taken from the air condenses on the coil's cooling fins. It then runs down the fins and into a collection system. The more quickly the water drains, the less chance there is of mold build-up, which is a common problem with air conditioning systems.

The old wall of coils had no effective means of moving the condensate to the drain. Condensed water from the upper coils would freely drip onto the fins of the coils below. The excess water load on the lower coils resulted in reduced efficiency and performance. To ensure this problem did not occur with the new system, Four Seasons installed water channels at the base of each coil in the upper two levels. These channels direct the water flow to the main water drainage pan, preventing the water runoff from a coil above contacting the coil below.



The new cooling/dehumidification coils located inside the air handler room. A specially designed distribution system and draining system improves efficiency, performance and longevity while maintaining a cleaner enclosure that greatly reduces the chances of bacterial contamination of the supply air.

A new condensate pan and drainage system, designed and fabricated by Four Seasons was installed at the base of the coil wall. This new drain pan has two features that greatly reduce the chance of bacteria from contaminating the supply air. Firstly, the pan was designed to drain water more quickly than a conventional drain pan. A drier pan means less bacteria. Secondly, the pan was fabricated out of stainless steel which is more hygienic and easier to clean. The installation was completed with the installation of a new bank of modular, high-efficiency filter cartridges on the opposite side of the coil wall where return air from the plant and outside air enter the air handler.

With careful design and attention to detail, Four Seasons was able to create a high-performance system capable of moving the necessary volumes of properly treated air quickly and efficiently. Perhaps in some ways the air handler is not so dissimilar from a jet engine after all. Yeah, right.

Outsourcing

Utilizing the skills of outsiders to accomplish your objectives



This article is a condensed version of the article "Making Outsourcing Work" by Michael F. Corbett, President, Michael F. Corbett & Associates, Ltd.

Outsourcing is redefining the modern business organization in ways few had envisioned even a decade ago.

Consider the following:

- 50% to 70% of the average cost of a product sold in the U.S. comes from outside suppliers.
- Worldwide, outsourcing for everything from basic custodial work through the most sophisticated integrated parts of a company's operations is exploding by 25% to 30% per year.

For the individual manager, there may be a rush to outsource just because it's what everyone else is doing. Managers should not outsource just to follow the trend; they should outsource to accomplish something in their operations – improve performance, reduce costs, accelerate growth. To do this, every manager needs to know the answers to the following five questions.

Question #1: What is outsourcing?

Outsourcing represents a long-term, results-oriented relationship with a specialized outside organization for whole functions that traditionally were done inside. When you outsource you have actually made a conscious, strategic decision that a set of activities or a function is not something you intend to develop and maintain as an internal competency. You look, instead, to leverage the unique, specialized ability of another organization and intend to do so for the foreseeable future.

When you outsource, you shift your attention

from 'how' issues to 'what' issues. You begin focusing more closely on the needs of your business and less on its internal operational constraints. Instead of limiting the solutions you offer because of limitations in the resources at your disposal, you begin to see yourself as an integrator of a virtually unlimited resource and skill pool. At the same time, your suppliers become your partners. You begin to look to them for creative ideas, new ways of doing things, new technologies and approaches. Their experience, after all, comes not from doing the work for one company—yours—but from serving hundreds, if not thousands of customers.

Question #2: Why are you outsourcing?

You have to ask where your organization gains its unique competitive advantage. If you choose to do something yourself, you should be better at it than the best company your competitor could hire to do it for them. If not, then you are sacrificing a competitive edge, which few can afford to do for long.

What are some of the business problems you might use outsourcing to solve?

- Inability to attract and retain needed talent.
- Competitive disadvantages resulting from internal operations that are not at best-in-world standards of performance.
- The need to speed entry into new markets.
- Rapid obsolescence of technologies making internal investments risky and hard to justify.
- Inefficiencies caused by cyclical demands and fluctuating volumes.

- Inability to offer career advancement to current employees because of limited opportunities.

Question #3: Is this a good outsourcing provider?

Finding the right partner and then managing the relationship is vital. Experience shows there are five key characteristics to be addressed:

- 1) Does the company have a demonstrated competency and a proven track record of solving similar problems for organizations similar to yours?
- 2) Are the services to be provided truly the core competency of that organization?
- 3) Are they best-in-world at what they do with a proven track record of advancement in their field?
- 4) What are the total capabilities and overall strengths of the organization? If this is going to be a long-term partner, they need financial, organizational, and management strength and depth. Also consider the full complement of capabilities you may need in the future.
- 5) Is the organization making and sustaining the kinds of investments needed to be a long-term strategic partner?

You need a competitive solution. Obviously, the specific solution proposed must fit your needs and it must work. But there are other factors as well. How will you treat affected personnel? How are the risks allocated and shared? Is there enough flexibility to handle the natural changes over time?

Question #4: How do I manage the relationship?

The relationship dynamics between the companies are critical for success. Will your organization's values and operating idiosyncrasies complement or aggravate each other? How important will you be as a customer? If too important, you may end-up with a subcontractor simply doing your bidding. If not important enough, you may end up with a rigid response to your ever-changing needs.

Most successful managers compare managing outsourcing relationships to the type of relationship they have with key employees. A shared commitment to achieving results and staying

ahead of change is what makes outsourcing work.

Equally important, the pricing and contract terms need to be designed so that both parties have a long-term alignment of interests. Develop a mutually agreed scorecard in advance that clearly and simply defines the desired results. Then, surround the relationship with a cohesive management system. This system should create organizational links between the companies at the operational, tactical, and strategic levels. Expect change and make sure everyone involved understands the process for dealing with change. Expect problems and make sure everyone involved understands the process for dealing with them as well.

Question #5: How does outsourcing change my job?

As outsourcing continues to redefine organizations it also redefines the role of the manager. A manager entrusted with an outsourcing relationship needs a desire to manage, not to do. You need to be a champion of change with the ability to instill trust. You need solid communications, negotiation, strategic planning, project management, team leadership, and even marketing skills.

The organization of the future needs two skill sets. The first is its core competencies – those skills and knowledge sets that truly differentiate the company within its marketplace and provide its unique competitive advantage. The organization will make significant ongoing investments to enhance and refine these competencies. As a result, the managers in these areas of the business will see increasing opportunities and upward mobility in their careers.

The second skill set is integration. The organization needs strong general managers who understand the business and how to integrate the capabilities of outside specialists into its overall operations. For the individual manager the question becomes: Is the area in which I specialize a core competency of my company?

If it is, fine. If it isn't, you're faced with a choice. You should either move your skills toward those of a general manager focusing on the business

and the integration of outsiders or, if you prefer to stay specialized, look for the opportunity to join an outsourcing service provider where your expertise matches *their* core competency. This is the most important career question faced by most managers today.

A final thought...

Outsourcing gets a bad reputation when it's used to get something done more cheaply by hiring a low-cost supplier. Too often the organization

ends up trading-off cost for quality, expediency for loyalty, long-term success for short-term returns. Done right, outsourcing creates enormous business value – both for your organization and for your career.

For information on outsourcing practices and strategies check out www.corbettassociates.com.

HOW IT WORKS

Air Curtains

Making barriers out of thin air

Imagine a barrier that keeps out wind, insects, dust and even the cold, but is totally invisible and can be crossed by people and their machines effortlessly. This may sound like some kind of force field from sci-fi fantasy, but it's actually pretty common twentieth century technology that makes up the devices we call *air curtains*.

Air curtains consist of a fan and nozzle system which creates a jet of high-velocity air directed across a door opening, providing a protective air shield. The air shield minimizes the transfer of heat, moisture, dust, fumes, wind and insects through the doorway. The air is provided at a critical velocity and volume flow as well as a discharge angle selected for its particular application.

Advantages of Air Curtains over Solid Barriers

- Environmental separation for open doorways without the drawbacks of solid barriers such as strip and impact doors;
- Reduced risk of accidents as vehicles and people

are able to move through doorways without obstructions to visibility or movement;

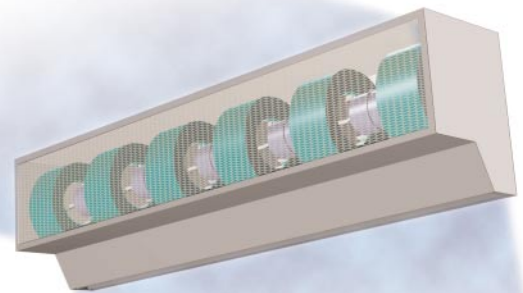
- Reduced mechanical door maintenance costs;
- More aesthetically appealing than plastic strip doors or high-speed doors.

Applications

Air curtains are used in a wide variety of places including shopping mall entrances, restaurant service doors, factories and warehouses.

Insect Control (Sanitation Maintenance)

Sanitation maintenance applications require that air curtains prevent airborne insects from entering. For fly and insect control, the air curtain projects the high velocity air jet across the opening, deflecting and prohibiting the entrance of insects, thereby



maintaining sanitary conditions.

For applications such as fly and insect control which require maximum protection, it is common and accepted to use a more powerful air curtain in order to achieve the necessary level of protection.

Thermal Barriers (Conditioned Air)

When dividing spaces with temperature differences, the air curtain prevents the natural flow of air caused by differing temperatures. The difference between indoor and outdoor temperature creates an imbalance in density, and therefore a pressure variation which causes the infiltration of outside air.

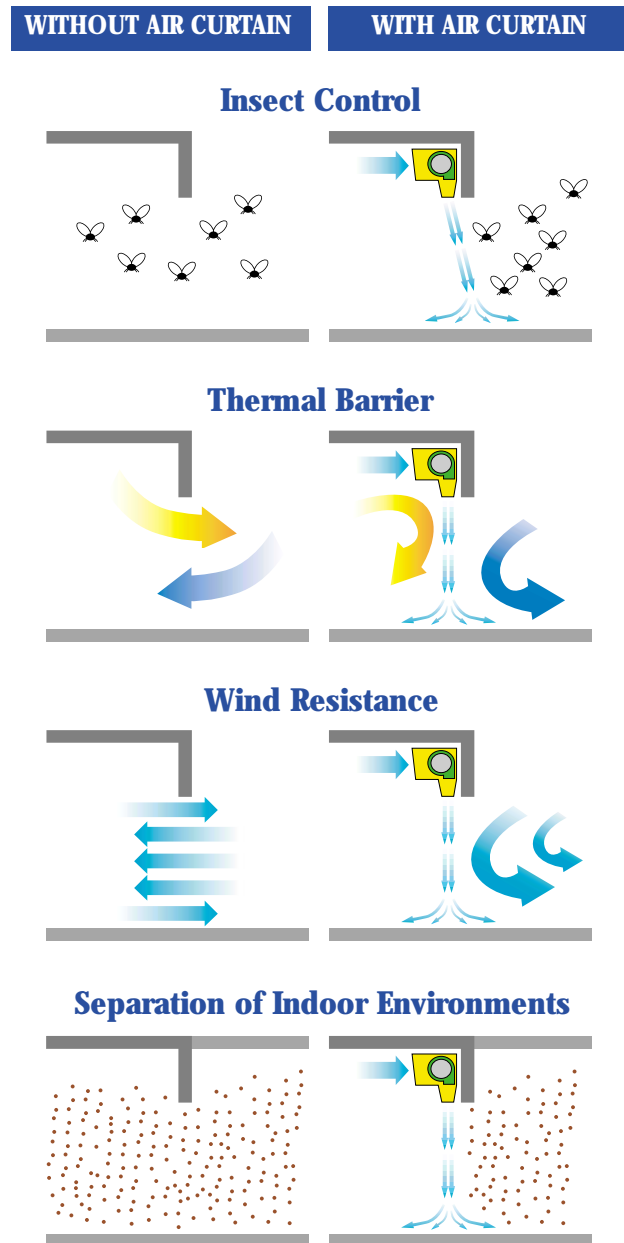
The installation of a properly-designed air curtain at the top of the doorway provides a shield of high-velocity air that deflects the natural convection air flow. This significantly reduces the exchange of air and energy between warm and cold sides, resulting in monetary savings.

Wind Resistance (Exterior Doors)

In many instances the infiltration of unconditioned air is driven by a combination of both the temperature difference and the added problem of a prevailing wind at a door opening. A prevailing wind could cause a significant loss of energy at unprotected doorways as large volumes of unconditioned outdoor air rush into the building while conditioned, indoor air escapes through the opening.

Air curtains resist this infiltration of outside unconditioned air by blocking and deflecting the incoming wind. Wind resistance is achieved by using a well-designed air curtain with an appropriate velocity and volume of air, directed at the appropriate angle at the exterior doorway.

A factor often confused as a wind condition is *negative pressure*. Negative pressure is created when more air is exhausted from a building than is replaced through make-up air equipment. Air curtains are available that can remedy negative pressure conditions by delivering the appropriate amount of make-up air as well as functioning as a air curtain.



Separation of Indoor Environments

In many facilities, manufacturing or production areas are located adjacent to either offices or other clean environments. The production side may generate fumes, dust and heat which are undesirable in the adjacent areas. Air curtains are ideally suited for these applications, repelling the undesirables without restricting traffic. The air curtain is mounted on the clean side so as not to circulate the contaminants through the unit, as well as to prevent blowing the contaminants into the clean side.

Old Willy's Words of Wisdom



It's a little known fact that Willy was very good friends with Albert Einstein. Over the course of their long friendship Willy picked up a lot of wisdom from the famous scientist. Here are some of Willy's favourite things that Einstein said.

"Only two things are infinite, the universe and stupidity – and I'm not sure about the former."

"Common sense is the set of prejudices acquired by age eighteen."

"Try not to become a man of success, but rather, a man of value."

"Nationalism is an infantile disease. It is the measles of mankind."

"A life directed chiefly toward fulfillment of personal desires sooner or later always leads to bitter disappointment."

THE PERFECT GIFT

A smile costs nothing, but it creates much. It enriches those who receive it without impoverishing those who give it. It happens in a flash and the memory of it sometimes lasts forever.

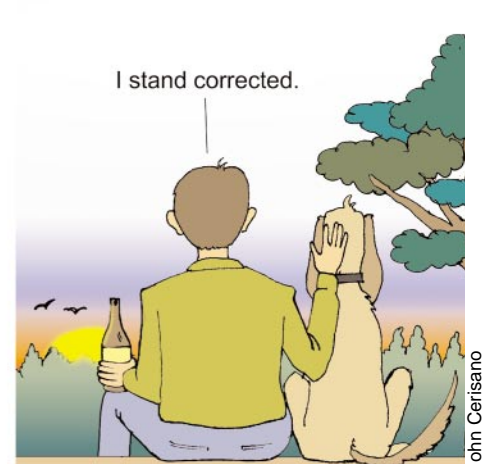
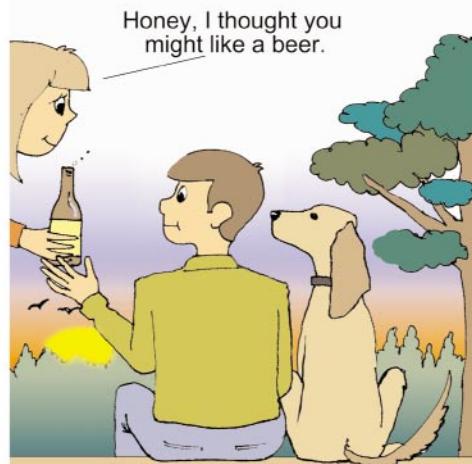
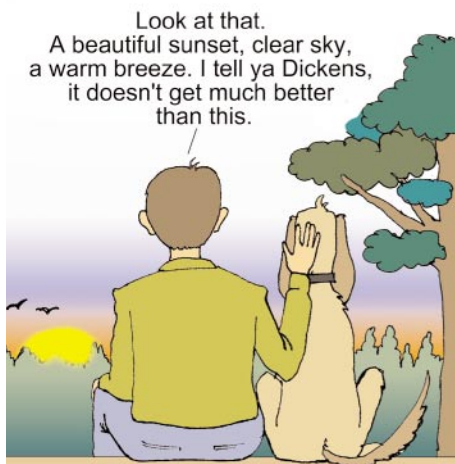
A smile creates happiness in the home, fosters good will in a business and is the countersign of friends.

It is rest to the weary, daylight to the discouraged, sunshine to the soul and nature's best antidote for trouble.

It cannot be bought, begged, borrowed or stolen; for it is something that is of no earthly value to anyone else, until it is given away.

And if it ever happens that some people should be too tired to give you a smile, why not leave one of yours? For nobody needs a smile as much as those who have none left to give.

Bodilee Functions



John Cerisano

FOUR SEASONS
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