

Creating Brand Value for the International Space Station

A Report By:

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12/13/2008

EXECUTIVE SUMMARY

This report is the final deliverable for the Japan-US Science, Technology & Space Applications Program (JUSTSAP). JUSTSAP tasked our team of MBA candidates from the Kogod School of Business at American University to quantify the brand value of, and develop a brand strategy for, NASA's International Space Station (ISS). The purpose of this report is twofold: to calculate a financial brand value for a potential ISS brand and recommend how to exploit this value through a brand strategy.

In determining the potential brand value for the ISS, we first administered our own survey to a demographic of generation X and Y consumers. From this population we calculated an estimated market value for products that companies could potentially sell using the ISS brand or spin-off technology. Next, using the Olympic model for sponsorship, we predicted future cash flows for NASA. Finally, we examined one potential product partnership for NASA given the popularity of an existing IMAX film titled *IMAX: Space Station*.

After determining the potential brand value of the ISS, we sought to effectively exploit the brand. We proposed that NASA employ an external marketing firm to create positive brand equity for the ISS. For the purpose of this report, we focused on corporate partnerships that produce consumer goods. We created several brand models to reflect the current objectives that NASA created for the ISS and focused on how these objectives will transcend to new commercial situations. We conclude with a discussion of JAXA's commercialization program, the JAXA COSMODE PROJECT, as a benchmark or case study for NASA and the ISS brand.

The branding of the ISS is an appealing proposition. NASA benefits from an improved public

image and a new-formed revenue stream, all while re-energizing the public's passion for space exploration, NASA, and the International Space Station.

Key Findings and Recommendations

Revisiting an ISS brand study is highly relevant

- A great deal has changed since the last brand study in 2002.
- It is 2008 and the station is almost completed.
- The physical asset itself is much further along; thus, there is more value to leverage with less risk.
- \$60 billion has already been invested into the station's construction.
- Taxpayers want to understand the tangible benefits of their taxpayer dollars.
- JAXA has developed a logo program, the JAXA COSMODE PROJECT.

The ISS brand has potential value

- We examined the potential value of the ISS brand using several methods discussed below:
- A consumer survey was administered to a sample population of generation X and Y consumers. This study illustrated a market value as high as \$2.2 Billion annually.
- Based on a single product connected to the ISS, *IMAX: Space Station*, we estimate that another ISS related product has potential revenues of \$120 million annually.
- Following the Olympic model, a partnership program has potential revenues of \$237.5 million annually.
- Finally, we estimated a net present value (total present value of a time series of cash flows) of \$152 million for NASA.

Recommendations for exploiting the brand

- It is important for NASA to consider an external marketing partnership that would develop and execute the strategic implementation and brand management.
- The ISS brand must be aligned with NASA's values. Having a specific culture sets the tone for how the brand will be marketed and will guide decisions in soliciting or approving which companies should be granted rights to leverage the ISS brand image or related technologies.
- Using the Olympic model as a reference, NASA should institute tight control mechanisms to ensure the integrity of the brand.

COMMERCIALIZING THE ISS

Revisiting an ISS brand study is relevant today

In 2002, NASA commissioned a report on the potential for sponsorship and commercialization of the International Space Station. The report explored the nature of sponsorships and discussed a potential strategy for deployment of an ISS global sponsorship program, highlighting various opportunities in which a sponsorship program has the potential to enhance the ISS. Although the report produced many attractive suggestions, NASA was not interested in pursuing any further examination of the suggested sponsorship program.

This year, 2008, marked the 10-year anniversary of the on-orbit construction of the ISS. As the construction comes near to finish it is an appropriate time to revisit the opportunities ISS can produce.

Taxpayers are questioning the relevance of NASA and ISS

NASA, funded by the government and United States tax dollars, is building the ISS in partnership with various other international space programs. The cost for the US to build the ISS has reached \$100 billion. Taxpayers are becoming more wary of NASA's spending, thus inquiring about the relevance of NASA and the ISS. By revisiting the commercialization plans for the ISS, NASA could illustrate the importance of the space program and produce an alternative funding source, which will help mitigate taxpayer's negative perception of the ISS and NASA.

JAXA has developed its own logo program: The JAXA COSMODE PROJECT

Currently NASA's counterpart in Japan, JAXA, has already sought to commercialize its space program by creating the JAXA COSMODE PROJECT (Cosmode). There will be a discussion later in this report about Cosmode; however, we argue that it is worthwhile for NASA to reanalyze this issue. JAXA is already taking on an endeavor into space commerce through leveraging a new branding project, thus exhibiting there is potential to commercialize the ISS.

ISS is the single largest international aerospace project undertaken by humankind

The International Space Station is the largest and most complicated spacecraft ever built. It is allowing NASA to conduct scientific research to improve life on Earth and to prepare for long-duration space flights to the moon and other destinations. The low orbit station was founded on international cooperation and can be seen with the naked eye. If NASA could leverage the ISS to the everyday consumer, it may be able to increase the brand awareness of this unique scientific project.

BRAND RESEARCH

Our client, JUSTSAP has already indicated interest in an ISS branding project:

While the original justification for the ~\$100 billion invested in ISS (\$60 billion spent / \$30 billion needed to complete) was to entice commercial R&D enterprise into space and facilitate research on humans for long-duration space missions, this rationale no longer appears adequate. Instead, an alternative "commercialization" scenario for ISS (under the rubric of "space commerce") may now be the key to its sustainability.¹

¹ <http://justsap.org/international-space-station-commercialization-issc>

To delve deeper into this issue, our team, in consultation with JUSTSTAP's Chairman, Stephen Day, analyzed prior studies and consulted with professionals from the finance and marketing industries. The specific sources of information used in this report to provide background information and to formulate our own conclusions and recommendations are detailed in subsequent sections of the report, but are summarized below:

- Prior comprehensive studies including, "The Potential for Strategic Sponsorship to Enhance the International Space Station (ISS)"
- Information gained from meetings with American University Professors in the field of marketing and finance
- Data from our own administered survey
- Current information regarding NASA's strategic mission and budget
- Brand evaluation techniques from Interbrand, A leading international brand consultancy
- Independent research from various publications and channels.
- Guidance for JUSTSAP

BRAND VALUATION

Evaluating ISS as a brand is a complex and complicated task

With estimated costs reaching \$100 billion, a large amount of capital has already been invested into the ISS, which we argue currently has no explicit brand value (although we argue it does have latent value, yet to be exploited). Based on the information received from our advisor and our own research we believe, with NASA's approval, there can be an alternative "commercialization scenario" for ISS that can create a brand with significant value.

The ISS is essentially a non-profit entity, and therefore we could not utilize standard brand valuation approaches used by public corporations. With this in mind, it was important for us to value the ISS brand using several methods that would examine the potential value for an ISS brand.

Survey results from potential target market

We first evaluated the ISS brand by creating a consumer survey. The survey consisted of general questions about space, NASA, and the ISS. The survey was sent to a random list of our peers who were all at least college-educated, and part of generation X or Y. The results from our survey were rather encouraging: 99% of the surveyed population was aware that there is a space station currently in orbit. This suggested to us that this demographic segment would be an appropriate target for commercialized products associated with the ISS.

According to our research, generation X and Y are willing to spend more for premium high tech products.² An example of these products include, but are not limited to: the iPod Nano from Apple starting at \$149,³ the classic iPod from Apple starting at \$249,⁴ the very trendy iPhone from Apple and AT&T starting at \$200,⁵ and a hi-tech jacket from The North Face starting at \$350.⁶ Therefore, we concluded that this segment of consumers, on average, would spend at least \$125 for a premium product enhanced or associated by the ISS. This is a very conservative price point knowing that generation X and Y are willing to spend more money for high priced products as shown in the examples mentioned above.

Currently there are 17.5 million consumers in the US that fit this target population. Therefore, if each of the 17.5 million consumers bought only one premium product associated with the ISS, we predict that the corporate partners of the ISS can generate a potential revenue stream of about \$2 billion.

² <http://www.tmcnet.com/submit/2006/10/29/2024247.htm>

³ <http://store.apple.com/us>

⁴ <http://store.apple.com/us>

⁵ <http://www.wireless.att.com/cell-phone-service/specials/iPhone.jsp?WT.srch=1>

⁶ <http://www.thenorthface.com/catalog/sc-gear/mens-reversible-mercurial-jacket.html>

Space Station: IMAX created awareness about the ISS

In 2002, IMAX films created a 3D movie about the construction, accomplishments, and future of the ISS. US astronauts and Russian cosmonauts took special IMAX cameras with them on initial missions during the construction of the ISS. The film was called *IMAX: Space Station*, and was one of IMAX's biggest box office successes for 2002, with \$40 million in revenue during the first 9 months.⁷ Using the revenues for this film we created our second approach to value ISS as a brand. We assumed that each IMAX ticket cost \$10.⁸ At this price, and given the \$40 million in ticket sales, we estimate that about four million tickets were sold. If 75% of the viewing audience saw the film once, 3 million people bought tickets for the movie and are interested in the ISS. Therefore, we can assume that if this audience were willing to pay \$10 to see a film about the ISS then it is reasonable to assume they would spend at least \$40 on an ISS-related product. We believe this is a fair estimate given the success of a BBC and Discovery Channel production called *Plant Earth*, which costs \$80⁹ for the set. We suggest creating an HD DVD that is similar to the *Plant Earth Series*. Therefore, there is a potential of \$120 million in revenues exclusively from the consumer population that has seen the IMAX film, spending \$40 annually.

Using the Olympic model as a marker

Next we reviewed the Olympic model. The previous brand study, commissioned by NASA, noted that the Olympic brand is a useful comparative to the ISS brand. Although the Olympics are a competitive sporting event held twice every four years, we feel that there is a lot

⁷ <http://www.allbusiness.com/services/amusement-recreation-services/4575283-1.html>

⁸ <http://tickets.lifetips.com/cat/64917/movie-tickets/>

⁹ <http://shopping.discovery.com/product-65763.html?jzid=40588004-84-0>

the ISS can learn from the Olympic model in terms of sponsorship. The Olympics use a specialized tiered sponsorship program, called The Olympic Partners (TOP), which is designed to consolidate, enhance and protect the rights, benefits and privileges of the sponsoring corporations. In turn, the sponsoring corporations pay a premium to be associated with the Olympic Games.

The TOP program is the worldwide sponsorship program managed by the International Olympic Committee (IOC). The IOC created the TOP program in 1985 in order to develop a diversified revenue base for the Olympic Games and to establish long-term corporate partnerships that would benefit the Olympic Movement as a whole.¹⁰

We propose that NASA form worldwide corporate partnerships that will not only increase the public's awareness of the ISS, but would be beneficial for the corporate sponsors as well. Differing from the Olympic model, we suggest the ISS partnership program be managed by an outsourced organization, such as a full-service marketing firm.

The TOP program provides the Worldwide Olympic Partners with exclusive global marketing rights and opportunities within a designated product or service category. The TOP partners may exercise these rights worldwide and may activate marketing initiatives with all the members of the Olympic Movement that participate in the TOP program.¹¹ We propose that the ISS create such exclusivity with its corporate partnership program to create a higher premium and more substantial benefits for their partners. We will discuss potential partnerships with marketing firms and potential corporate partnerships later in this report.

¹⁰ http://multimedia.olympic.org/pdf/en_report_561.pdf

¹¹ http://multimedia.olympic.org/pdf/en_report_561.pdf

The Olympic Family manages the Olympic sponsorship program with a twofold mission: to provide the opportunity for each partner to derive the greatest value from its Olympic association and to ensure that Olympic sponsorship supports the Games and the athletes in a manner that promotes the Olympic ideals and enhances the Olympic Image. The Olympic Family provides comprehensive services and resources to the Olympic sponsors to ensure that the Olympic sponsorship remains the most valuable corporate marketing opportunity in the world.¹²

These same principles align with NASA's view for the commercialization of the ISS. Our proposed partnership campaign will continuously be aligned with NASA's core principles and would never alter a NASA mission or put any NASA astronauts in potential harm. The ISS partnership program, similar to the Olympics, will provide many opportunities for corporate partners while simultaneously promoting and enhancing the image of NASA and the ISS.

Using the Olympic Model, ISS can create revenue from sponsorship program

By incorporating the Olympic model to the ISS, We estimate that the ISS can charge a premium price to their potential partners. If the ISS can create a partnership program similar to the Olympics and generate at least half of the Olympic sponsorship revenues, the ISS will have a revenue potential of \$238 million in one year. See **Exhibit 1** for Olympic Sponsorship revenues. We also believe that in the future, the ISS can create revenues from licensing and possibly broadcasting, similar to the Olympic model.

¹² http://multimedia.olympic.org/pdf/en_report_561.pdf

Conclusion of the Brand Value

Using these three methods and the conclusions we reached, we argue that this project is worth pursuing. Our survey verified that there is a market for a product enhanced or altered by the ISS. The IMAX movie demonstrates the potential revenues from only one specialized product. Finally, the Olympic model can be used as a benchmark for a potential sponsorship program that could forecast a future revenue stream for this program.

Net Present Value

Taking into account our three methods to analyze the potential market for the ISS, we have calculated the net present value (NPV) for a partnership program associated with the ISS. NPV is an indicator of how much value an investment or project adds to the value of the firm. NPV is the present value of a sequence of cash flows and outflows. For the ISS, our cash flows are generated from our proposed partnership program. The lifetime for the projected cash flow is 10 years, until 2020 when the ISS is scheduled to retire. It is a general finance rule that risky projects from public firms will generally use a discount rate of 25-30%. Since this commercialization project with the ISS has never previously been attempted, we will use an ultra conservative discount rate of 40%.

Using the Olympic model as a benchmark, we created our cash flow assumptions. When the Olympics first introduced the TOP program they partnered with nine corporations that paid on average \$10.6 million for sponsorship rights in 1985-1988. In the latest Olympic period, 2005-2008, the Olympics partnered with 12 companies who each paid on average \$72 million for the sponsorship rights. We would never compare the ISS brand to the Olympics, but using its

cash flows as a benchmark, we have predicted a conservative cash flow for the life of the ISS project.

The first year we suggest that the ISS could establish partnerships with three companies paying \$10 million each. The number of partnerships increases each year until it reaches six corporations. Initially, we will cap the corporate partnerships at six to keep the integrity and exclusivity of the ISS brand. Since we are capping the corporate partnerships at six companies by year five and six we will increase the partnership fee. By year five the ISS brand should have established itself as a recognizable brand and will require a premium price. Therefore, our NPV for the 10-year life of the project, with uneven cash flows, and a discount rate of 40%, is \$152.6 million. Thus this project is worth pursuing, as it will add value to NASA. Please see **Exhibit 2** for details of our NPV analysis.

ISS BRAND STRATEGY

According to Brand Amplitude's Brand Strategy Toolkit, "The purpose of a brand strategy is to provide a plan for the systematic development of a strong coherent brand in order to enhance revenue and profits. The strategy should be driven by the principles of differentiation and sustained consumer appeal."¹³ The International Space Station is in need of a strong brand identity and a long term strategy in order to increase consumer appeal and improve revenues to provide an option for the station to stay in orbit longer than 2020.

¹³ http://www.brandamplitude.com/our_services.htm

Current Positioning

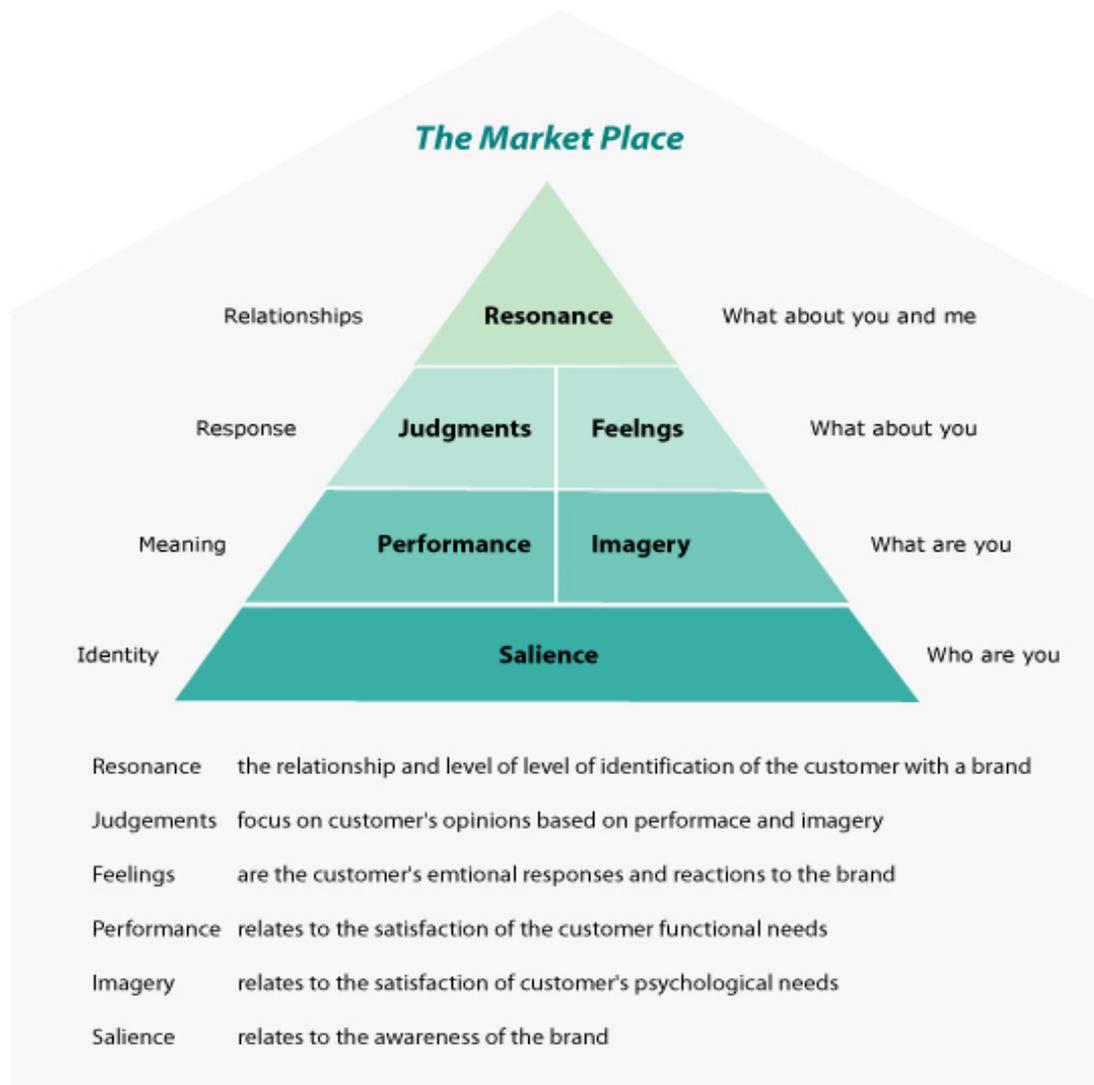
The International Space Station is a unique multinational collaborative project that is divided between the United States (NASA), Russia (RKA), Japan (JAXA), Canada (CSA) and eleven European countries (ESA) based on purchased market share. While this unique international project could be seen as an opportunity to establish one unique brand strategy similar to the Olympic model, governing ownership is complex, and filled with various ideologies and management practices. For example, the Russian Space Agency, Roskosmos, has a program for space tourism while NASA (US Space Agency) focuses heavily on aerospace research and development. Thus, to create one brand image and mission would be extremely difficult, and as a result, our brand research is focused on NASA and the United States.

Currently, NASA has positive brand equity and is uniquely identified by the American consumer. If ISS could become an affiliate of NASA, its brand identity could be seen as a valuable asset in terms of profitability and customer loyalty. However, the brand strategy for ISS must reflect NASA's organizational values and be compelling to the consumer. If ISS's strategy is out of step with NASA's values and culture, it will have little success in business buy-in.

Brand Equity Pyramid

Establishing a successful brand strategy for ISS must first start with understanding how to effectively build the brand from its current position, and should be identified by key measurements that can help create positive brand equity. The Brand Equity Pyramid shown

below can be used to help understand a brand’s organizational development and how consumers’ will respond to the brand’s associations. ¹⁴



Adapted from: Kevin Lane Keller, Strategic Brand Management, Irwin McGraw-Hill, 2003

The pyramid is built upon awareness (salience) of the brand. Once the salience of the brand is known, a consumer must identify with the brand in order to make a judgment call and assemble a relationship with the brand. Based on this pyramid, it was important to determine how many US consumers knew about the International Space Station (salience). It was also

¹⁴ <http://www.brandamplitude.com/images/Branding%20from%20the%20Inside%20Out.pdf>. Pg. 3

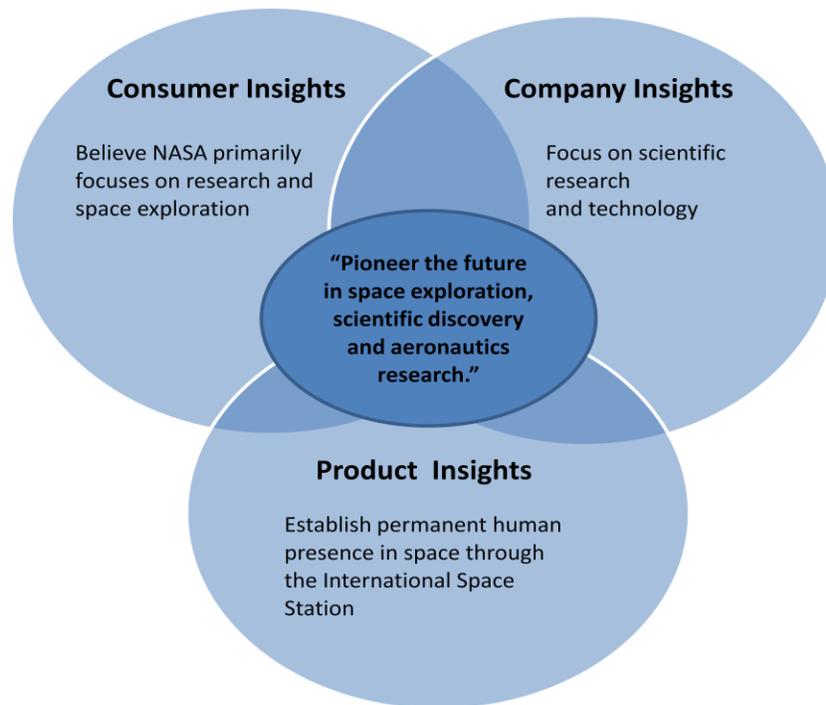
essential to uncover how interested consumers' are about space technology (imagery) and if this technology would transform their purchasing habits (feelings, judgments, resonance). This information would help our group develop a brand culture and determine how to build the brand.

To reveal the best strategy for brand implementation, we first created a survey of 100 consumers and hypothesized that adults with at least a college level education would have the most knowledge of the International Space Station. With an expendable income and brand awareness, we thought this target audience would spend more money on products enhanced in space. Our hypothesis turned out to be somewhat correct as graduate level consumers have a general interest in space, recognize ISS as the space station currently in orbit and are interested in products enhanced in space. See **Exhibit 3** for more detail on the survey results.

While we recognize this survey is ad hoc and not representative of a large portion of consumers, we wanted to get a general understanding of consumer's interest in space, their understanding of NASA values and their recognition of ISS. We knew this was important because in order for NASA to have business buy-in, we needed to show there is a market for these products and consumers are willing to spend more for these products.

ISS Brand Model

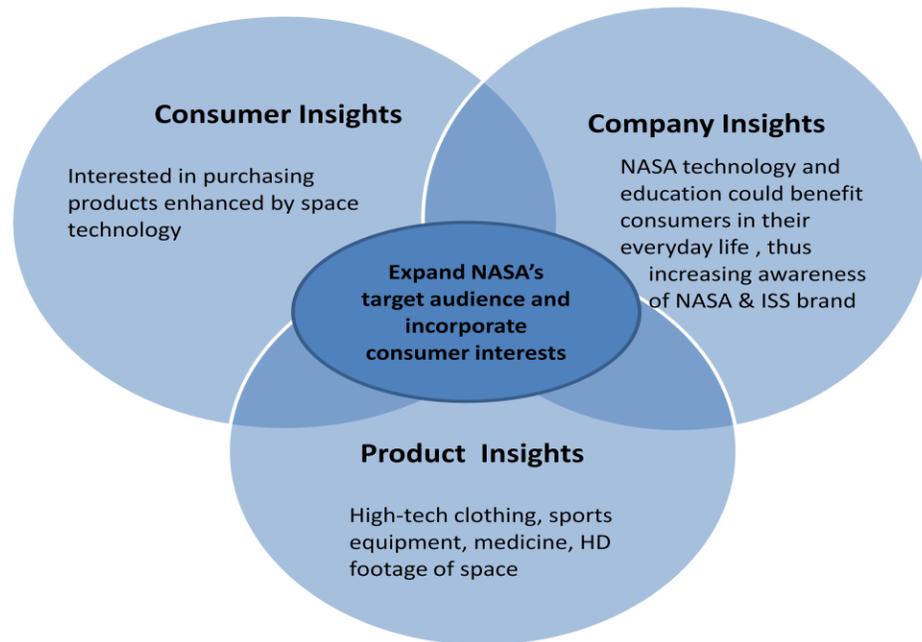
Based on our results from the survey, we created two models: the first model reflects the current objectives NASA has created for the International Space Station, while the second model determines how to apply the traits from the first model to new, commercial brand situations that will enhance the International Space Station's image with the everyday consumer.



The three circles above show the relationships between consumer, company and product insights; and how they align with NASA’s brand image and mission statement (the dark center circle). The Consumer Insights table on the top left is based upon our survey results, and based on those results consumers believe NASA focuses primarily on research and space exploration. The top right circle shows that the consumers who took our survey understand that NASA’s core focus is on scientific research and technology. The Product Insight circle demonstrates how NASA associates its mission statement and goals with the International Space Station.

ISS Brand Development

Next, we applied the same model to help strategize how NASA could expand its brand image into a new sub-brand category that would focus on the commercial sector.



The model addresses consumer preferences (Consumer Insights circle) based on our survey results and how a new brand connected to Company Insights can be established to generate more consumer interest in ISS and NASA. This will create a unique opportunity for the International Space Station to make their new sub-brand model more relevant and compelling to our target audience through consumer products (example products are based on our survey results), as demonstrated in the Product Insights circle. This insight could help NASA create a strong and compelling brand position for ISS in the commercial sector that will still give the company the ability to focus on its core competencies.

BRAND CULTURE

Establishing and defining a brand culture for the ISS brand is an essential element of the brand development and strategy. The culture sets the tone for how the brand will be marketed and helps to guide solicitation or approval decisions with respect to which companies should be granted rights to leverage the brand image and related technologies. Critically, once key

stakeholders (such as NASA executives, ISS leadership, and marketers) agree upon the ISS brand culture, it should be communicated widely amongst internal and external stakeholders (from those involved with the project to taxpayers – both funding and consuming the “products” of the ISS). Thus, marketers must ensure that there is no ambiguity about what the ISS brand stands for and the values it represents.

The brand culture must be aligned with NASA’s core values

Because we recommend leveraging the NASA brand with the new ISS brand, keeping the affiliated NASA image in tact is paramount; in fact, promoting the ISS brand by communicating to the public the tangible benefits resulting from NASA projects such as the ISS should reinforce and improve the perception of NASA itself. Because of the strong affiliation between the agency and the commercialized component of ISS, the brand in many ways is representative of NASA itself. Thus, the ISS brand culture should encompass the same core NASA values: safety, teamwork, integrity, and mission success.¹⁵

Firms that use the ISS brand must also encompass these values: The North Face example

In order to maintain the integrity of the ISS brand (and therefore the affiliated NASA brand), there must be a logical connection between the core values and mission of the ISS and the firm seeking to utilize the brand image or products. The North Face is one example of a firm that fits this notion. The company’s website notes, “Welcome to the North Face: Home of the technically advanced, innovative apparel, footwear, and gear that inspires athletes to Never Stop

¹⁵ <http://www.nasa.gov/news/budget/index.html> “2006 NASA Strategic Plan”

Exploring.”¹⁶ See **Exhibit 4** for screenshots of the website. Implicit through the types of products the company sells (from clothing designed for comfort and protection while exploring mountainous, winter terrain to equipment for use in sports including alpine climbing and skiing and snowboarding), one can deduce that The North Face values safety (its products help to ensure adventurers are safe in many harsh environments) and teamwork (the sports it promotes through its sponsorship are team-oriented).

Additionally, there is a clear essence of appreciation for exploration, which is certainly an aspect that NASA values. In fact, in The North Face’s sustainability statement, the firm notes: “Sustainability and conservation form the core of The North Face pledge to advance the well-being of the planet and its citizens - especially those who enjoy exploring our world.”¹⁷ Based on our research of NASA, this statement is something that the agency would also support.

The North Face products also align with the ISS brand objectives

Not only does The North Face embody similar values to NASA (and thus the ISS brand in recommendation), many respondents of the survey our team conducted noted they were interested in apparel and sports equipment using ISS related technology. This is a clear win for the ISS brand project for many reasons. These types of products are high value added and thus, many of these firms would presumably pay higher premiums for the technology. Consumers of products such as those sold by The North Face are interested in apparel or equipment developed using innovative technology (as noted in The North Face’s homepage statement); purchasers in this segment tend to be more affluent and educated (the target population we are recommending),

¹⁶ thenorthface.com

¹⁷ http://www.thenorthface.com/webapp/wcs/stores/servlet/TNFAttachmentDisplay?langId=-1&storeId=207&catalogId=10201&attachment=%2Fcorporate%2Fabout_us%2Fsustainability%2Fsustainability_page&type=corporate

and thus more aware of the ISS; and the technology sought for these types of products would not be outside of the scope of existing development – the ISS would not have to divert attention from its core research to develop technologies for these products.

BRAND IMPLEMENTATION

Thus far we have argued that an ISS brand should be limited to the NASA component of the international program. Narrowing the scope of the brand will help to mitigate several of the issues inherently related to forming a global ISS brand (the political agendas/geo-political issues, for example). Moreover, we recommend partnering with an external firm that will conduct both the brand and marketing strategy development and management. Because NASA and ISS involved personnel have little experience with branding and marketing, we suggest that the agency leverage experts in this field. Not only will this ensure that the most qualified team is executing this highly risky project, but it also enables NASA and ISS practitioners to continue to focus on their core competency – without diverting resources away from the core responsibilities of such personnel. Moreover, having an external firm developing, executing, and managing this process should enable companies seeking to leverage the ISS brand the ability to cut through red tape of government bureaucracy in a more efficient manner.

Firms gain the right to brand and market the ISS through a competitive bidding process

Structure

We recommend that NASA put out a Request for Proposal (RFP) and have firms submit proposals. While the specific nature of the proposal requirements are outside the scope of this

project, we envision that NASA could contract out the brand strategy and marketing execution and management pieces combined or individually. Several issues to consider when making this decision include the types of firms engaged in this business (*are there strong firms that can manage taking on both components?*); the degree of necessary integration (*to what extent would communication and cross-functional work be required for the two pieces?*); and the perception of competitive bidding (*are there issues that warrant creating two separate contracts – would having one firm managing both aspects have too much influence?*). While answering these questions are beyond the scope of this project, all else equal, we suspect that having one firm take on all responsibilities would be more beneficial for continuity of the project.

Evaluation Criteria

Again, while the specific details of the evaluation criteria are not within the project scope, we generally recommend two key considerations in proposal review. First, as aforementioned, we noted that leveraging the ISS brand is important because taxpayers want to see tangible benefits resulting from NASA funded projects. Thus, one evaluation criterion should relate to the value that the bidding firm would add to NASA “shareholders” – the American taxpayers. *Can this firm execute their proposal plan in the most economically efficient way? Can this firm deliver on its revenue projections – can it deliver the right partnerships with companies that seek to use the ISS brand?*

Secondly, bidding firms should be evaluated on the extent to which the firm understands the nature of federal work – specifically, the bidder’s ability to understand and work within the political and cultural aspects of NASA. *Will the partnership be successful both on its output*

(delivering financial results) and in the process itself (can the agency and the firm work together for the most successful outcome in this high risk project entering new “terrain”)?

Fee structure

Additionally, we can broadly suggest that firms can structure the payment schedule through a revenue sharing or fixed-fee model. In the revenue sharing model, the bidder would pay a proportionally less initial fee for the rights to brand/market the ISS (relative to the fix-fee model), and would subsequently give a percent of the future revenues to NASA (or specifically the ISS budget if this is possible). This would spread the risk between the agency and the contracted firm throughout the life of the project. This structure may also incentivize the winning firm to generate more revenues, as the firm will have to share revenues with NASA or the ISS program. In the fixed-fee model the bidder would pay a higher initial sum for the exclusive rights to the future revenue streams. This places more risk on the bidder – the known cash outlay is higher; however, the upside cash flows would be kept within the winning firm.

In either case, a minimum revenue threshold should be considered. That is, if the winning firm is unable to generate revenues beyond a predetermined amount agreed upon by both parties, NASA could revoke the contract and put the rights out for bid again. Of course, in all of these recommendations and alternatives, the legal issues should be considered in addition to agency governance issues. While we do not have full access to this information, all else equal, we recommend favoring proposals under the revenue sharing model. This is because it appears to provide a natural incentive mechanism to generate more revenue, and while very presumptive, this model may facilitate greater transparency and communication if the bidder knows that the agency is bearing some risk involved with the project.

Brand Protection

Protecting the integrity of the brand, once established, is a critical component of the brand management phase. For example, the Olympic brand has a multi-billion dollar sponsorship program that includes multinational firms and countries from across the globe. Yet, the measures that the International Olympic Committee (IOC) has taken to protect the brand image have kept the brand integrity intact. Thus, the Olympic model is one way to benchmark how the ISS brand can be protected.

The IOC has taken several steps to ensure brand protection. For example, the IOC has maintained several policy objectives that include:

- No advertising or commercial messaging in or near Olympic venues;
- Sponsorship programs are designed to maximize support for the Games through the minimum number of sponsorships;
- Control sponsorship programs to ensure the partnerships are compatible with the Olympic ideals.

In this regard, several components relating to brand protection should be stipulated in the RFP.

- The awarded firm will not permit marketing materials or logos anywhere on the ISS or shuttle themselves.
- The awarded firm will select firms and develop sound relationships with them to ensure contracts will be honored. Additionally, the awarded firm will select a

limited number of high value-added firms that are permitted to leverage the ISS brand.

- The awarded firm will select companies that have values and products or services that explicitly align with ISS brand values and “products.”

By including these stipulations, NASA and the ISS can ensure from the start that firms utilizing the ISS brand will not detract from the core image of NASA and the Space Station. Additionally, proactive management of the brand use will mitigate some risk relating to brand mishandling, and working with a limited number of firms using the ISS brand will create a sense of exclusivity; thus, it can command a higher premium for brand and technology use. Finally, selecting firms that align with ISS values and activities ensures that the ISS brand is not in such a way that tarnishes ISS integrity – as mentioned previously, there should be a logical synergy between the ISS and the firms seeking to leverage the brand and ISS related technologies.

MARKETING PARTNERSHIPS

When researching what type of marketing partnership would best fit into NASA’s culture, we had to look at large and small scale companies that could partner with NASA and help develop a strategy and brand for the International Space Station.¹⁸ During this process, we researched several large and small scale companies; such as Fleishman Hillard, Interpublic Marketing Group, Interbrand, Freedom and Confluence Consulting. Based on our research, we determined it would be best for NASA to have two oversight contractors; a marketing firm and consulting firm. The prime contractor would be the marketing firm that would develop a brand

¹⁸ Some of the companies we took into consideration when doing our research include: Confluence Consulting – Washington, DC, Passion Marketing – LA, Nexus Direct – Washington, DC, The Marketing Partnership Ltd. – London, Association Marketing, Interpublic Marketing – New York.

strategy and determine the best method for public partnership. The sub-contractor would be the consulting firm that would determine what technologies NASA has that could be used for public use and how these technologies would be bid on by selected firms.

NASA should consider the benefits & costs of partnering with a small company

Based on our research we determined that a small marketing or consulting company in the DC area could strategically fit into NASA's core competencies for the following reasons:

- The close proximity to NASA headquarters in DC would help to easily communicate in person with NASA Executives
- DC consulting firms have more experience working in the government and non-profit sector
- A small consulting company would have less upfront costs
- A small consulting company would have the ability to develop a more personal relationship with NASA

At the same time, a small company lacks the ability to be used as a good publication and branding tool, and would be unable to work in-house on both the strategy and brand implementation.

NASA should consider the benefits & costs of partnering with a large company

If NASA wanted to work with a large scale marketing or consulting firm, there would be the possibility of having both the marketing and strategy components streamlined in-house.

While this may be a more expensive route, NASA could leverage a large company's international scope in order to increase brand awareness. A larger company may also have the

ability to be more operationally efficient because it has centralized resources and support. Also, the depth of knowledge and personnel that work within a large company may be better equipped to quickly determine what technology and products would be best suited for NASA and the International Space Station.

BENCHMARKING: THE JAXA COSMODE PROJECT

Examining the Cosmode as a benchmark or case study is useful on many levels. As mentioned, JAXA's efforts on this regard highlight the relevance of revisiting the ISS branding discussion; moreover, it enforces the argument that creating a global ISS brand is not feasible. Understanding the development and execution of Cosmode also enables one to draw applicable lessons to help guide NASA professionals think through the decisions involved in creating an ISS brand.

Correspondence with a JAXA administrator shed light on key issues.

Through a reference with Stephen Day, our team was put in touch with Mr. Kazuya Suenaga, Administrator of the Planning and Coordination Group within JAXA's Industrial Collaboration Department. Information in the following section has been provided largely through email correspondence and documents sent by Mr. Suenaga, who is deeply involved with Cosmode.

The JAXA COSMODE PROJECT

Cosmode is a logo project that was developed by JAXA. See **Exhibit 5** for the brand logo. While the brand does not solely encompass JAXA, it does leverage the JAXA name and is

targeted towards consumer-oriented products developed with JAXA involvement. The project is structured such that private companies can partner with Cosmode in one of three segments. For more details on the structure see **Exhibit 6** a tekronomicon article describes these segments as:

- “Collaboration: Products developed in collaboration in JAXA under its Space Open Laboratory (a JAXA program to coordinate projects with academia and industry, not a physical laboratory);
- Spin-off: Products using JAXA patents or technology, under its Intellectual Assets Use Program;
- Space Certified: Products certified by JAXA for space mission use, under the Space Japanese Food Certification Program and a similar proposed program for non-food items (11 food makers already produce 28 food products for ISS mission use).”¹⁹ See **Exhibit 7** for slides given by Mr. Suenaga.

Development of the project

Mr. Suenaga noted that to determine if a logo project was warranted, JAXA looked internally to “discover and define the brand value.” By conducting interviews of “20 proper staff from a wide post from the space science section to the human resources department in JAXA including [the] president and [an] astronaut.” Through this data gathering, researchers concluded that “there was a sense of values peculiar to a Japanese for the space and the space development and [they] finally developed the concept of “PROJECT”.” They argue that there is a unique value proposition of the project, “because [they] emphasize a spectacular and novel value that the space can offer [the] consumer, rather than an ordinary image of space that the consumer has

¹⁹ http://www.tekronomicon.com/gadget/2008/05/jaxa_cosmode_product_brands_space_products

already had when [they] measure[d] the value of the space brand.”²⁰ Thus, in contrast to our recommendation, JAXA conducted an internal analysis to determine the feasibility and benefits of having a project to brand the space agency. Because of the need for buy-in at all levels for the brand and marketing project we are recommending regarding the ISS, conducting a thorough and rigorous quantitative and qualitative assessment of the proposed project is inherently necessary.

Project objectives

Cosmode is organized into four phases: analysis, strategy, creation, and communication. Mr. Suenaga notes that the project is currently in the communication phase. During the first two phases, Cosmode leadership defined the following objectives:

- Create promising and continuous market-oriented projects by connecting needs with seeds.
- Promote spin-off of the intellectual property and technology transfers to the private sector.

He also noted that to achieve these objectives, project personnel must “focus on promoting the entrance of non-space industry firms into the space business.” Moreover, to incentivize this entrance his team believed that the “visualization of the brand value concerning space is the most effective” mechanism.²¹ That is creating a logo or brand for JAXA-affiliated products or technologies is the best way to get private companies to buy into the idea of leveraging space in the marketing of consumer goods.

²⁰ Email from Mr. Kazuya Suenaga, November 10, 2008

²¹ Email from Mr. Kazuya Suenaga, November 10, 2008.

Lessons for NASA and ISS branding

Similar to JAXA's focus on creating brand to exploit the inherent yet dormant value within the space agency; executing and managing a marketing strategy to generate external (to the agency) cash flows through partnerships with private companies seeking to leverage the brand and affiliated technologies; and increasing public awareness and interest in the agency's work, we recommend that NASA revisit the idea of branding and marketing the ISS. Our limited survey and semester-long research indicates that consumers are interested in products using technology developed through ISS efforts and would pay a premium for such goods.

Additionally, if NASA were to put an RFP on the street and have companies bid on the right to develop and market this untapped brand, NASA (and the ISS directly if revenue streams could go straight to the project) would suddenly receive cash flows from a project that most see as having purely sunk costs and cash outlays. Thus, the benefits are cultivated on many levels. The agency benefits from an improved public image; it would also receive cash inflows from an alternative source of funding, while not having to divert its attention from its core work; and consumers have access to goods that use NASA-developed technology, while learning more about how their taxpayer dollars are going to work with respect to the space agency. In this regard, developing and exploiting an ISS brand is a win-win situation.

Exhibit 1: Olympic Top Program Sponsorship Revenues

TOP Programme Evolution

Quadrennium	Games	Partners	NOCs	Revenue (\$US Million)	Revenue per sponsor (\$US Million)
1985- 1988	Calgary/Seoul		9	159	10.666667
1989-1992	Albertville/Barcelona		12	169	14.333333
1993-1996	Lillehammer/Atlanta		10	197	27.9
1997-2000	Nagano/Sydney		11	199	52.636364
2001-2004	Salt Lake/Athens		11	202	60.272727
2005-2008	Torino/Beijing		12	205	72.166667

http://multimedia.olympic.org/pdf/en_report_344.pdf

Exhibit 2: Net Present Value Analysis

Year	1	2	3	4	5	6	7	8	9	10
Number of Partners	3	4	5	6	6	6	6	6	6	6
Cash flow Per Partners (US\$ Million)	10	10	10	10	10	14	27	27	27	27
Total Cash Flows (\$US Millions)	30	40	50	60	60	84	162	162	162	162
NPV= (\$US Million)	152.59									
					Discount Rate	40%				

Exhibit 3: Consumer Survey

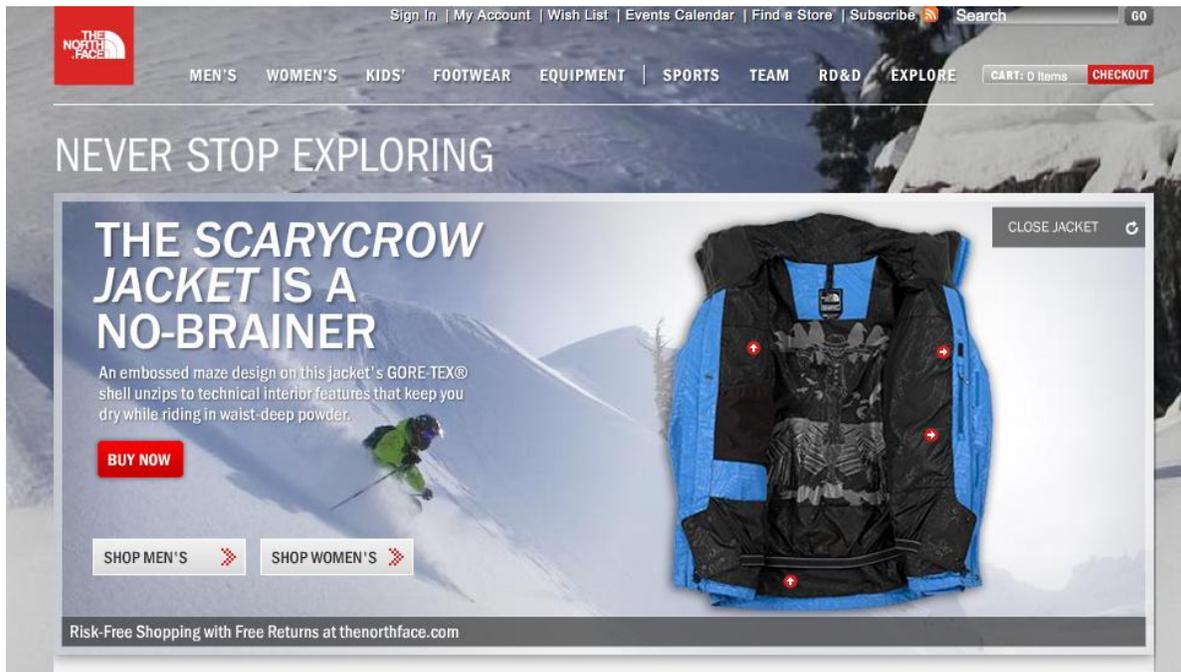
Determine the percentage of the population that is aware of the space station:

In order to help us to understand the current (and drive potential) ISS awareness, we started by taking the total US population over the age of 18. Using this as a starting point, we are then reducing this number (because it's fair to say that not everyone over 18 knows about ISS). We are also assuming that populations in states with space centers are more likely to have heard about ISS (from news, people that work for NASA, etc). We have sent a survey to people we know over this age of 18 (of course, when we explain the use of our survey we will explain the characteristics of the surveyed population further such as nearly 100% high school and college educated, breakdown of states from which the respondents come, etc). We are using the survey as a baseline to help us guide a reasonable "guestimate" of how many people over the age of 18 know about the ISS. If you take a look at our survey, you will notice that respondents indicate if they are from one of the states with a space center (and indicate specific state) or other. These results of the survey will help us to adjust our population figures according to location. If this is confusing to you, we are more than happy to discuss this over the phone or in-person.

The statistics and information we are using to guide this analysis include:

- A. The population of the US is ~ 305 mil. and the percentage of individuals over 18 is ~ 75%
- B. The six states that have NASA space centers are California, Texas, Louisiana, Florida, Alabama and Virginia. The percentage of individuals from these six states is 31% of the total US population. While only using these six states will skew the model, we are trying to determine the level of awareness of the ISS by individuals that live closer to NASA space centers.
- C. The percentage of individuals that are over 18 from the states mentioned above is 20 %
- D. The percentage of individuals that are high school grads from the states mentioned above is 16.3 %.
- E. Because 20 % is still very high, we have created a focus group and have sent a survey to friends, faculty, colleagues, etc that live in the US. Our survey is still targeting these specific states. If there is no brand awareness in the states closest to these stations, we can make an assumption that it will not be much higher in other areas of the US.
- F. We are in the process of retrieving data from our survey. We will use the results of the survey to help us determine the appropriate approximations for the percent aware of the space station.
- G. For your reference, this is the link to our survey:
http://www.surveymonkey.com/s.aspx?sm=bqygORQWVOHEa8Q4JcV1zw_3d_3d

Exhibit 4: Screenshots of The North Face Website



The screenshot shows the top navigation bar of The North Face website with links for Sign In, My Account, Wish List, Events Calendar, Find a Store, Subscribe, and Search. Below the navigation are category links: MEN'S, WOMEN'S, KIDS', FOOTWEAR, EQUIPMENT, SPORTS, TEAM, RD&D, and EXPLORE. A shopping cart icon shows 0 items and a CHECKOUT button. The main banner features the headline "NEVER STOP EXPLORING" and a product promotion for "THE SCARYCROW JACKET IS A NO-BRAINER". The text describes the jacket's GORE-TEX shell and technical interior features. A "BUY NOW" button is present, along with "SHOP MEN'S" and "SHOP WOMEN'S" buttons. A "CLOSE JACKET" button is visible on the right side of the product image. At the bottom of the banner, it says "Risk-Free Shopping with Free Returns at thenorthface.com".

Featured News: The North Face Announces 40th Anniversary with Progressive New Initiatives

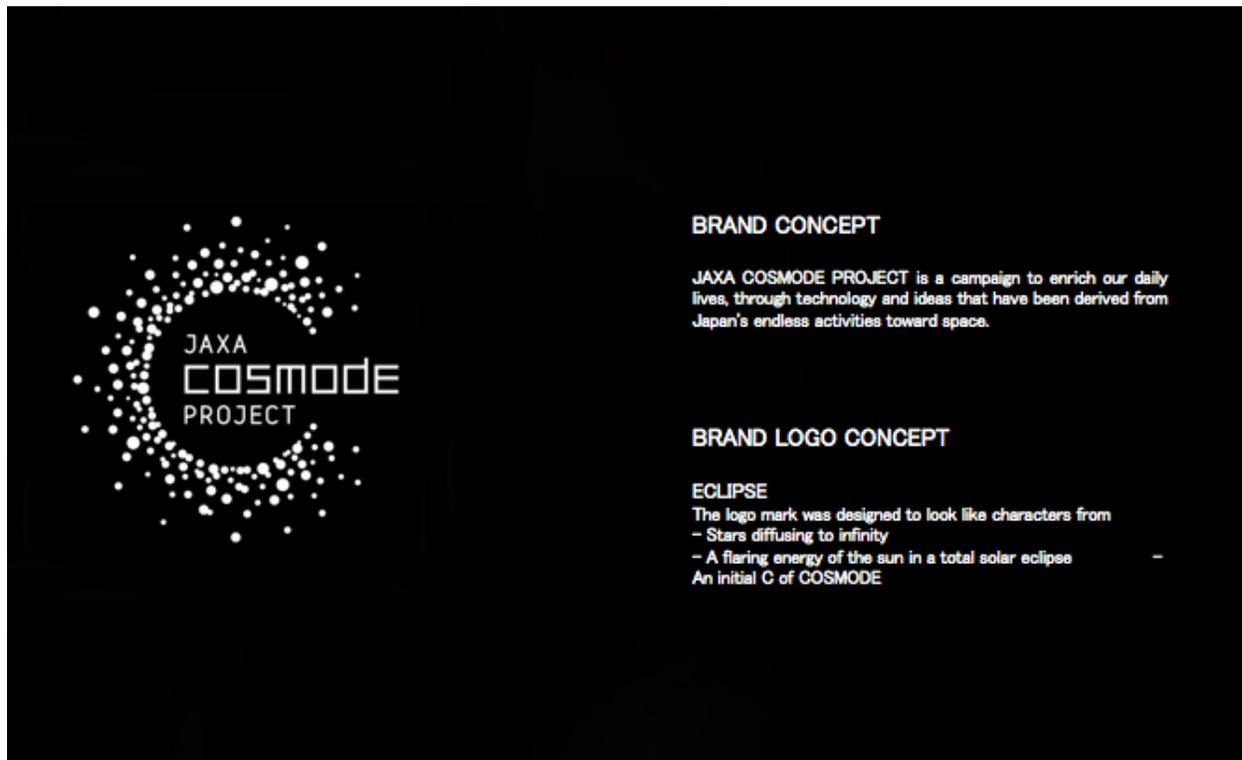
The North Face, the world's premier supplier of authentic, innovative and technically advanced outdoor apparel, equipment and footwear, today announced details of its Research, Design, and Development organizational changes, agreements impacting climate change, and the company's outdoor participation initiative.

[READ MORE](#)



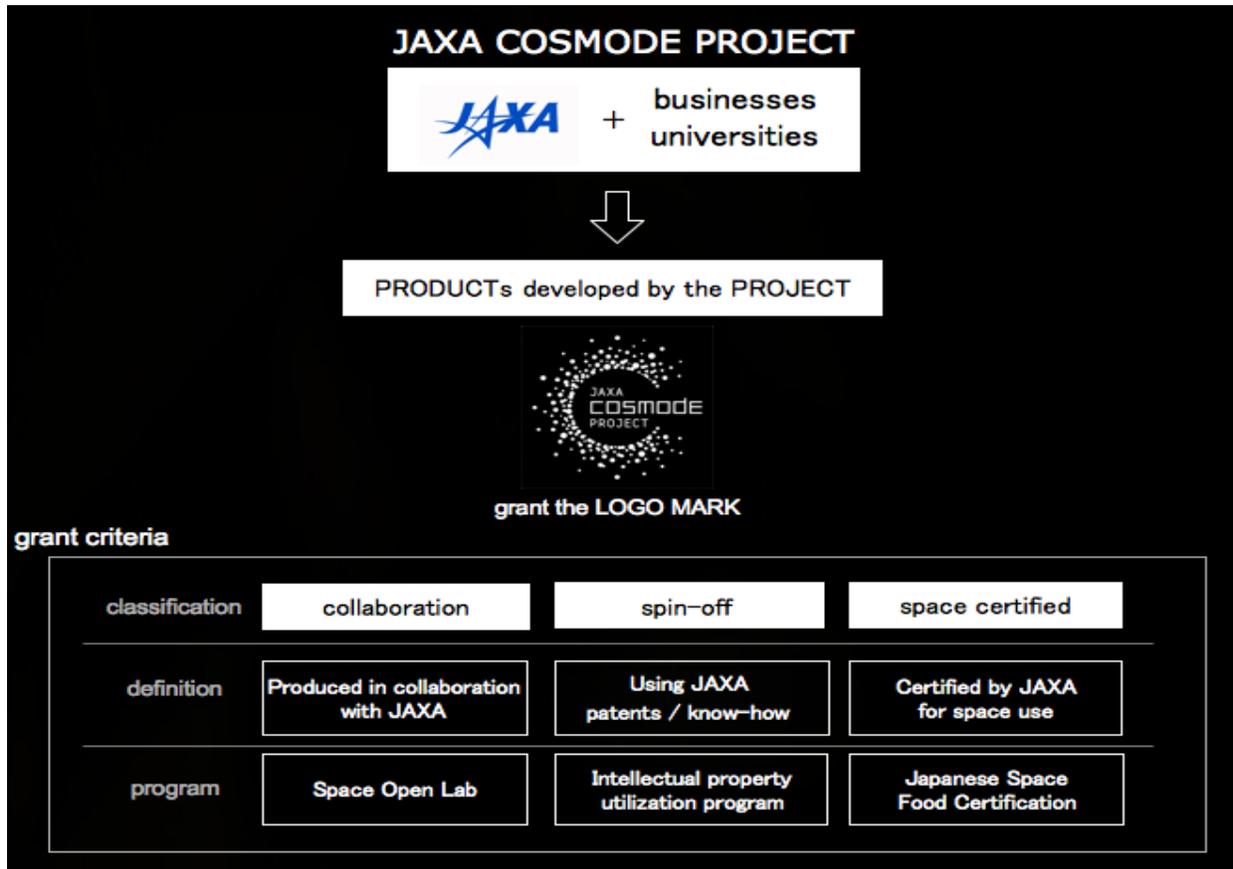
'In the Northern Hemisphere, the north face of a mountain is generally the coldest, iciest and most formidable route to climb. "The North Face" reflects our mission and dedication to exploring the extremes of our planet and our own capabilities.'

Exhibit 5: JAXA COSMODE PROJECT Logo and Brand Concept



Slide provided by Mr. Kazuya Suenaga, email correspondence November 10, 2008

Exhibit 6: JAXA COSMODE PROJECT Structure



Slide provided by Mr. Kazuya Suenaga, email correspondence November 10, 2008

Exhibit 7: Examples of products under the JAXA COSMODE PROJECT

SPACE OPEN LAB

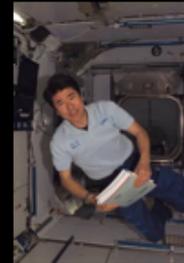
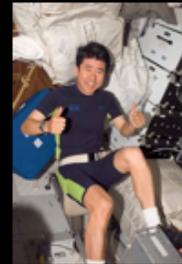
Space Open Lab., is a system established for non-space companies to enable their participation in the space business beyond traditional borders. JAXA are aiming to apply commercial technology in space and create a new space business through collaboration between companies with outstanding technologies and unique business ideas and JAXA. After registration anybody can participate in Space Open Lab and once a suggestion is adopted, cooperative research can be performed utilizing JAXA's research fund.



The research for life support in the space

This unit team which involves companies of excellent textile technology and sewing technique has developed comfortable clothes for on-board crew. These clothes have antibacterial, antibromic and deodorized effects which couldn't have been realized with traditional cotton materials. After tests and reviews, they were launched to the International space station (ISS) on STS-123 mission in March 2008. And JAXA Astronaut, Dr. Doi, put them on during the mission. It is an advantage as crew-support technology that clothes remain comfortable to wear for days. For instance it would be able to reduce amount of clothes for ISS Expedition Crew in the future. Furthermore, it is expected to become a spin-off in clothing and bedclothing for people needed nursing care or with disabilities.

Unit Leader: Yoshiko Taya (Japan Women's University, Professor)



Space Entertainment Business which utilized the planetarium

The unit leader, Mr. Ohira, developed a mobile planetarium "MEGASTAR" on his own and has been introducing it at science museums and others. "MEGASTAR" can project as many as five million of stars at the world's largest number. In JAXA Aerospace Open Lab. program, a new planetarium system has been developed based on "MEGASTAR" with additional computer and projectors. The system can project JAXA's research results, astronomical image data and computer graphics combined with planetarium image. The pilot planetarium programs using the results have been shown in popularity at science museums and events. Therefore a business model to provide brand-new attractive space education contents has been demonstrated. In addition, Mr. Ohira has founded a company on Aerospace Open Lab. program and started a full-fledged business.

Unit Leader: Takayuki Ohira (Ohira Giken)



SPIN OFF

Thermal insulation material

The cohesive insulating material for the fairing of H-II Launch Vehicle is able to harden at room temperature. As it has high resistance to deformation, bending, extremely high or low temperature and shaking damage, it will neither crack nor become detached. Furthermore, this thermal insulation material is light and has a high performance level for heating.

The thermal insulation technology has been commercialized and put into market as a heat insulator for buildings, applying the heat insulating technology to a range of diversified purposes.



Water Recycle Technology

Environmental Control and Life Support System (ECLSS) technology is very important for human beings in the space station especially for long duration stay in the future. Water recycling is one of the major themes. The know-how from the water recycling research is applied in the water purifier on the ground. The reverse osmosis film with holes less than nano-size makes very clean and safe water.



JAPANESE SPACE FOOD CERTIFICATION

Nutritious food and minimal stress are essential for astronauts who stay at the International Space Station for a prolonged period of time to fulfill their missions. JAXA started to establish qualification criteria for Japanese Space Food in 2004. Choices include not only traditional Japanese cuisine, but also home cooking. In 2007, 29 recipes passed the criteria and qualified as "Japanese Space Food."



Samples Japanese Space Food



JAPANESE SPACE FOOD for sale.

SPACE CURRY
(House Foods)



JCF Space Foods Co. Ltd.

YOHKAN
(Yamazaki Baking)



JCF Yamazaki Baking Co. Ltd.



Japanese Space Food
Logo Mark