

Chapter 7

PRIVATE FUNDING FOR MARS MISSIONS

Book sales were brisk in the busy hall. Rachel Zubrin (age 6) makes sure everyone has a “Mars or Bust” button.

A SPONSORING CONCEPT FOR MANNED MISSIONS TO MARS

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After the first lunar landing in July of 1969, public interest in manned space flight has continued to decrease. In contrast to this phenomenon, other comparable high technology events, such as international automobile racing, are growing in popularity. Formula 1 racing, in particular, has developed into a highly profitable, privately sponsored economic enterprise. Because of its tremendous financial power, Formula 1 racing is able to recruit top personnel in the fields of technology, sports, marketing and management. As a result, it's possible to achieve challenging project goals very quickly. Project successes lead to an increase in public interest. Thus, additional private sponsors are willing to put their money into Formula 1 events.

This paper starts by pointing out the critical success factors of Formula 1 sponsoring. Next, a number of possibilities are discussed on how to increase public interest in manned space. On this basis, a sponsoring concept for manned missions to Mars is developed.

1. INTRODUCTION

Over the last 25 years, public interest in manned space flight has continually decreased. This trend has continued in spite of the scientific and technological achievements of manned space projects in the post-Apollo era, such as Skylab, ASTP, STS/Spacelab, STS/Mir.

Diminished public interest has led to a subsequent decrease in congressional funding. The ambitious plans of the 60's for manned space flight to other planets have yet to receive public funding. Presently, not a single space agency has concrete plans for a manned mission to Mars. Although NASA has the largest budget of any space agency worldwide, and has always been proud of its pioneering spirit, it, too, has recently canceled all plans for manned missions beyond LEO (Raumfahrt Journal 1/98, p. 21).

These projects were canceled against the advice of well-respected aerospace engineers, who assert that a manned flight to Mars would be readily achievable with current technology. Development of untried, 21st century, '*Battlestar Galactica*' technology would not be necessary (Zubrin, R., *The Case for Mars*, 1996, p. 2). The main obstacle to manned flight to Mars remains the financing of such an endeavor.

Since public funding is out of the question, both currently as well as in the near future, this paper explores the possibility of private sponsor-financing.

2. HOW TO REAWAKEN BROAD PUBLIC INTEREST

Inspiration of broad public interest is an important prerequisite for private sponsoring models.

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During the Apollo program, the main motivation for political and public interest in space flight was competition with the U.S.S.R., rather than science. The public found the “Race to the Moon” both thrilling and fascinating. As a result, citizens were more than willing to spend their tax dollars to support “their” space program.

Today, manned space missions are conducted as international cooperative efforts (e.g. the International Space Station), without any competition involved. The public is unfortunately not interested in microgravity research, LEO missions or the cost advantages of international cooperation. Public interest would be much greater in the following areas:

- thrilling entertainment provided by spectacular competition
- new mission destinations, such as Mars (‘to boldly go where no man has gone before’)
- real-time participation in mission events via Internet (e.g. Pathfinder)
- extreme speed, acceleration and exciting flight maneuvers
- the danger and adventure of manned space flight
- the personal appeal of astronauts and other space officials as heroes or role models.

Thus, a *Race to Mars* could play a critical role in winning back public interest in manned space flight.

In contrast to the present manned space flight, other comparable high technology spectator

events are growing in popularity. International auto racing, such as Formula-1, is driven by competition between drivers and teams sponsored by industry. Formula 1 racing has developed into a highly profitable, technologically-driven enterprise, which generates billions of dollars in revenue each year.

Manned space flight has much in common with Formula-1 racing and could therefore appeal to a broad public. These similarities include:

- high goals
- high speed for their respective conditions
- high requirements for both man and machine
- application of the newest technologies
- test pilots subject to permanent test situations under dangerous conditions
- use of light and highly durable materials
- heroic status of astronauts and Formula-1 drivers.

If it proves feasible to make use of the competitive spirit, organizational and management structures of Formula-1 racing in manned space missions, then it should also be possible to take advantage of similar commercial sponsoring mechanisms to finance these missions. The principal determinants of success in Formula-1 sponsoring are discussed below.

3. SUCCESS FACTORS IN THE SPONSORING OF FORMULA-1 RACING

3.1. Competition

Empirical observations show that public interest in Formula-1 racing is primarily due to competition between drivers and teams sponsored by industry. Viewers are only interested in one thing: who will win. If all teams combined their efforts and built a single car in order to save on development costs, viewer interest would disappear.

Financial success in a market economy is based on competition. Competition is the sole force which motivates a company to develop technological concepts more quickly and cost efficiently than its competitors. The rate of technical innovation slows down as soon as competition is replaced by international cooperation. The same principle holds true for the establishment of monopolies through fusion or acquisition of competitors.

In Formula-1 racing, it is quite evident that extreme competition between teams drives technological development. Figure 1 illustrates the chain reaction effect of competition in Formula-1 racing.

Figure 1 Cycle of Success.

Competition between different drivers and teams raises the thrill-level for the public. Public interest attracts sponsors, who advertise their products and their corporate image. Sponsors

contribute large sums of money as well as personnel with marketing and sponsoring expertise.

The budget for each team can exceed \$300 million per year. This makes it possible to hire top personnel, who are responsible for superior technological achievements. This increase in achievement leads to an increase in public interest in winning drivers and teams. For example the recruitment of aerodynamics expert Adrian Newey from Williams Renault to McLaren Mercedes contributed to the success of the McLaren team in 1998.

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3.2. Broad Public Interest in Drivers

The Formula-1 race is billed as the world championship for drivers. It often develops into a title bout between two top competitors. For example, between

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Prost and Senna, even though they were on the same team (McLaren)

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Hill and Schumacher

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Schumacher and Villeneuve

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Hakkinen and Schumacher.

The broad public is especially interested in the successes and failures of individual drivers. This means that the drivers themselves are the main attraction in the Formula-1 business. No one would bother watching an auto race with remote-controlled cars.

The public is not only interested in the professional achievements of a driver, but also in the driver as a person. The result is, that sponsors want the drivers to market their products or corporate image. It is in the sponsors' interest to sign the best drivers.

3.3. Marketing of all Aspects

The large number of viewers is the key to the success of the Formula-1 sponsoring concept. This makes Formula-1 racing very attractive to sponsors. All aspects of Formula-1 racing have

been successfully commercialized:

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races (TV-rights, admission, VIP-services)

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drivers

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all hardware and software used in the races

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sponsors' products and corporate images

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other products, which are advertised during commercial breaks

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merchandising.

4. TRANSFER OF SUCCESS FACTORS TO MANNED SPACE FLIGHT

4.1. Introduction of Competition

Up until now, conventional wisdom has held that a manned mission to Mars would require the combined efforts of all countries with space programs. For the International Space Station program, all competition has been completely excluded. International cooperation has been elevated to the highest goal. Since the project began in 1984, public interest has been low and progress on the project has moved very slowly.

The introduction of competition is the most important prerequisite to increase public interest. The only remaining question is, „**Who will be the competitors in the Race to Mars?**“

Competition between different countries, as in the Apollo program, is not an option today due to the changed political situation. Government agencies have neither the will, nor the capability to carry out a manned mission to Mars.

On the other hand, global mergers have led to the fusion of huge conglomerates in the

aerospace industry. Due to their technical and managerial competence, the following corporations would be capable of planning and carrying out a manned mission to Mars:

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Boeing (USA)

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Daimler-Benz Aerospace (DASA) in Daimler-Chrysler conglomerate (Germany, U.S.A.) or

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European Aerospace and Defense Company (EADC) as a currently proposed future merger of Aerospaciale, BAe, DASA and other European Space Corporations (Europe)

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Lockheed Martin (USA).

These corporations could compete against each other in a Race to Mars. Such a race between different teams sponsored by industry would guarantee an increase in public interest. Sending the first person to Mars would be the best advertising for each industrial team. This event would deliver enough material for advertising claims for the next century. Both the winning team as well as all other participating teams would be assured a place in the history of space exploration.

Financing such a mission still remains a problem. Even a conglomerate as large as Boeing would not be able to absorb the entire costs for a manned mission to Mars. The costs for the hardware alone would be prohibitive.

The gap between total costs and the amount each corporation would be willing to contribute could be filled by sponsors. These sponsors could advertise their companies and products as part of the manned mission to Mars. As soon as one of the aerospace conglomerates decides to support a manned mission to Mars, public interest would be aroused. Other sponsors could be approached immediately thereafter. The following headline could appear in newspapers in 1999:

EADC to Send People to Mars in 6 Years

Sensational Announcement Made by the European Aerospace Conglomerate

Project to be Financed Exclusively by Private Sponsors

Once plans for a private mission to Mars are announced, other aerospace corporations, or even NASA itself, will also decide to sponsor their own missions to avoid falling behind their competitors. This would open the Race to Mars.

The public would attentively follow the Race to Mars. As a result, an increasing number of sponsors would be willing to invest their money in the industrial teams. The cycle of success shown in Figure 1 would develop its own dynamics. During the planning, development and test phases, public interest can be raised by regular reports on:

- project advancements
- selection of the astronauts
- flight crew /backup crew decisions
- astronaut training
- test flights and other hardware tests
- alternative launch windows and trajectories.

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Money from the sponsors finances project advancements. As shown in Figure 2, two complementary effects occur simultaneously. During the project life-cycle, more money is needed as the project progresses. Phase A (Feasibility Studies) is much less expensive than Phase C/D (Design, Development). As the project progresses and success seems imminent, more sponsors will be willing to contribute. Financial requirements and resources increase together as the project life-cycle progresses.

Figure 2 Complementary Correlation between Project Costs and Sponsoring Money.

The first step is to find a way to finance the first phase of the project. Thus, sponsors who come on board at the start of the project should be offered the best conditions.

4.2. Opportunities for Marketing

4.2.1. Advertising Space

The sponsors' logos could be presented on different types of advertising surfaces. The size of each logo would be cost-dependent. Sponsors could reach a wide array of viewers during news reports covering different race events: astronaut training, launch, the flight, landing, reentry. The following types of advertising could be considered:

(a) Flight Hardware

The rocket boosters, the landing vehicle, the reentry module, etc. would provide ample space for sponsors' logos.

(b) Clothing

The astronauts and other representatives of each industry team could wear sponsors' logos on their clothing whenever they are in the public eye. The astronauts' space suits and helmets would be especially effective for advertising.

(c) Billboards

Sponsors could present their products on billboards at the launch site, on shop floors and in aerospace and astronaut training centers.

4.2.2. Advertising in Print and in Electronic Media

Sponsors can advertise both their products as well as their corporate images in print and in electronic media. Taking a cue from the Olympics, a company can buy the rights to call itself an „official sponsor“ to the first manned mission to Mars.

Some examples:

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Schweppes - Official Soft Drink Sponsor to the Motorola-EADC-Mars Team

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The new sport utility vehicle from Daimler-Chrysler: Mars-proven technology

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Computer Associates - The quality of our software shines through in critical moments

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Fortis Official Cosmonauts Chronograph.

4.2.3. Merchandising

Merchandising is the marketing of products which are loosely tied to the project by the sponsor's logo. The rights to use certain images, symbols or logos can also be licensed to third parties.

Some examples:

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miniature flight hardware and model-building kits

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posters and flags

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Caps

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T-shirts

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Watches

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Pens

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Sunglasses

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coffee mugs

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Magazines

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Books

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computer games

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food products.

4.2.4. Marketing the Main Events

Important milestones during the preparations (roll out, test flights, astronaut training), the launches, critical flight maneuvers, the landing on Mars, the exploration of the planet, reentry and landing (e.g. splashdown) are spectacular events for the broad public. These events could be subject to more intense marketing.

For example:

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selling the TV rights

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advertising during commercial breaks

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selling tickets for the launches; prices would be based on the distance between the observation platform and the launch site

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special VIP service during critical mission phases

4.2.5. Marketing the Astronauts

As mentioned earlier, public interest focuses on the astronauts themselves as famous personalities. Astronauts are viewed by the public as heroes. This image can be quite valuable to sponsors. Frequent media reports on the astronauts can continually raise their levels of recognition. Astronauts could represent their team sponsors at public events. The names of especially popular astronauts (e.g. the first person on Mars) could be developed into name brands. The advertising rights to use astronauts' names could be licensed to third parties.

4.3. Organizational and Managerial Implications of Sponsoring

The organization of the sponsoring model will be illustrated using a hypothetical team funded by the future European Aerospace and Defense Company (EADC) as an example. The EADC-Team, would develop all of the flight hardware itself and then later buy launch capacity from another firm.

The EADC Team's marketing department would be responsible for finding sponsors to support the Mars project. The proposed organizational structure is illustrated in Figure 3:

Figure 3 Organizational Structure of a Hypothetical Mars Team.

5. SUMMARY

This paper presents a sponsoring concept for a privately financed, manned mission to Mars. The concept can succeed, provided that the following conditions are met:

(1)

Public interest for a manned mission to Mars can be awakened.

(2)

Sponsors can be found to support the first critical phase of the project.

(3)

One of the major aerospace corporations can be convinced that a manned mission to Mars is worthwhile.

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(4)

An inexpensive project proposal can be developed, which would convince the sponsors that such a project is financially feasible.

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