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Author: Mr. Dustin Kaiser
Futron Corporation, United States

Mr. Joseph Fuller
Futron Corporation, United States

Mr. Ian Christensen
Futron Corporation, United States

Mr. David Vaccaro
Futron Corporation, United States

NATIONS THAT MAY PURCHASE COMMERCIAL HUMAN SPACEFLIGHT TRANSPORTATION
SERVICES

Abstract

Thirty nations without indigenous human spaceflight transportation systems have sent approximately 100 astronauts into orbit on systems operated by other nations as of March 1, 2011. This paper examines the characteristics of nations that send astronauts into orbit on non-indigenous launch systems in order to help identify nations today that may choose to purchase commercial human space transportation services.

New human spaceflight transportation systems are in development. It is likely that at least one commercially operated system will emerge in the next decade. One of the potential major customer segments for a commercial system will be nations that do not operate indigenous capabilities but desire to send astronauts into space. This paper is not a forecast but instead aims to advance the discussion of which countries are most likely to purchase commercial services based on historical examples.

To determine which nations may purchase commercial services, it is useful to examine the motivations and historical context that have led nations in the past to send astronauts into space on non-indigenous systems. Specifically, this paper will use a basic PEST analysis method that examines the political, economic, social, and technological conditions that have supported a nation's decision to send an astronaut into space. Examples of some specific conditions include a desire to improve technical capability, conduct basic research, increase national prestige, and strengthen relations with strategic allies or as an opportunity to stand out among regional competitors. Other characteristics include a nation's investment in research and development spending as a percentage of the gross domestic product.

Informed by the historical research, nations today are categorized within a tiered structure to identify which are most likely to purchase commercial human spaceflight transportation services. For example, a tier-one nation has many of the historical characteristics that make it likely to purchase transportation services, while nations categorized into lower tiers contain fewer of the characteristics.