



Can Your Alliance Network Lift a Stealth Bomber Off the Ground?

Why the first stealth bomber never took off, but the second one did.

Does this airplane look familiar? It should, because it's a predecessor of the famous Stealth Bomber, a prototype completed by Jack Northrop's company in 1948. In his time, Northrop — the inventor of the flying wing concept — was considered to be *the* aerospace genius, but he was not able to deliver on his promise to the U.S. military. The revolutionary airplane never got beyond the prototype.

In 1980, Jack Northrop, then age 85 and confined to a wheelchair, visited a secure facility to see the first B-2 Stealth Bomber — the most advanced military aircraft capable of flying at extremely high altitudes and avoiding radar detection.

Even after 40 years of technological development and use of sophisticated computer design tools, the new bomber looked like a replica of Northrop's original design for the flying wing. Reportedly, after seeing the aircraft, Northrop said he now realised why God had kept him alive for so long.

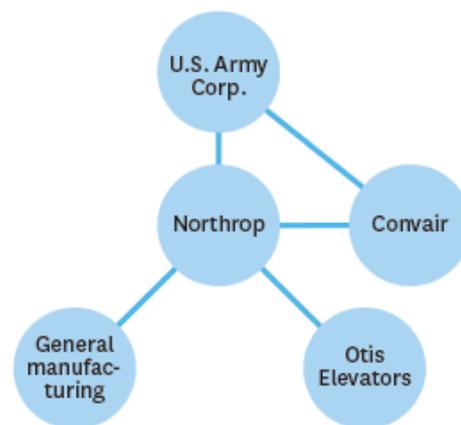
So why did one model fail and the other succeed? Part of the explanation can be found by comparing the different networks of alliances that Northrop's company formed in the forties and in the seventies.

In 1941, his alliance network looked small and simple hub-and-spoke system. Otis Elevators worked on design, General Manufacturing and

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Convair provided production facilities. Notice that the partners don't work with one another and the U.S. Army Corps was actually brought in to arbitrate a dispute between Northrop and Convair.

NORTHROP'S ALLIANCE NETWORK, 1940s



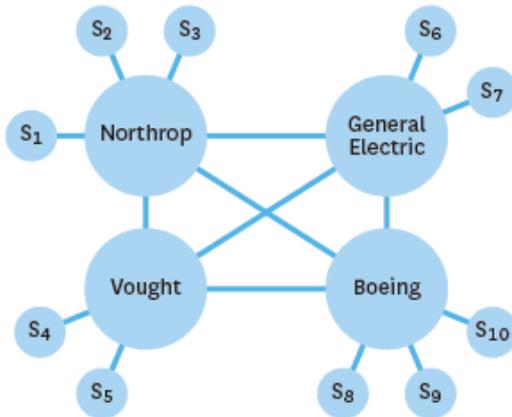
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In 1980, the alliance network was more complex and highly integrated. Network partners worked with one another, jointly negotiating technical standards. Vought Aircraft designed and manufactured the intermediate sections of the wings, General Electric manufactured the engine, whereas Boeing handled fuel systems, weapons delivery and landing gear. In addition, each main partner formed individual ties with other subcontractors specific to their areas of

responsibility.

NORTHROP'S ALLIANCE NETWORK, 1970s

S = Company ties with other subcontractors specific to their areas of responsibility



SOURCE HEINRICH GREVE, TIMOTHY ROWLEY, AND ANDREW SHIPILOV HBR.ORG

As we discuss in our new book "[Network Advantage](#)", networks like this have two main benefits. First, alliance partners are more likely to deliver on their promises. If information flows freely among interconnected partners, how one firm treats a partner can be easily seen by other partners to whom both firms are connected. So if one firm bilks a partner, other partners will see that and will not collaborate with the bilking firm again.

Second, integrated networks facilitate fine-grained information exchanges because multiple partners have relationships where they share a common knowledge base. This shared expertise allows them to dive deep into solving complex problems related to executing or implementing a project.

This is not to say that the hub-and-spoke network of the 1940s doesn't have its uses. In fact, they are usually more effective at coming up with radical innovation than are complex, integrated networks. In a hub-and-spoke configuration it's more likely that your partners will know stuff you don't already know and combining new, distinct ideas from multiple spokes leads to breakthrough innovations for the hub firm.

But Northrop's hub and spoke portfolio was not useful in the 1940s, because he already had an innovative blueprint for the bomber. All Northrop needed to do was to build reliable manufacturing systems that would execute his ideas based on incremental improvements made by multiple partners at the same time. That scenario called for the integrated network of the 1970s.

The key to choosing between the two types of network is to ask: do you already have a final idea that needs to be implemented with incremental

improvements? Is it important that all of your partners trust each other and share knowledge in implementing your idea? If so, then the integrated alliance portfolio is right for you. If you are exploring different options and it is not critical that your partners trust one another, work together to develop and/or implement them, then the hub and spoke portfolio is the best.

You can read more about this and other network-related stories in my new book "[Network Advantage: How to Unlock Value from Your Alliances and Partnerships](#)"

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