iCV TAnK
Technology Advisory
& Knowledgebase

Cutting-edge Technology Fan

Comparative Supplier Evaluation: An In-depth Report

Oct. 2023

CTF Introduction

The CTF model of ICV TAnK helps the public understand the development of cutting-edge technology fields and corresponding companies. Cutting-edge technology has many characteristics such as un-converged technology routes, high uncertainty in technology development, and early stage of commercialization promotion. With the continuous development of technology, a reasonable model is needed to evaluate the company, and form a consensus on the comprehensive evaluation of cutting-edge technology suppliers in specific periods.

The CTF model consists of four differently-sized fan-shaped regions and three-dimensional coordinates. The horizontal coordinate is the Maturity of Technology (i.e. the technology, R&D, team), the lateral coordinate is the Commercialization of Technology (i.e. the revenue, customer, application case), and the vertical coordinate is the Enterprise Heritage (i.e. the elements that the supplier has accumulated over the long-term operation that can help the development of the enterprise). The CTF model divides suppliers into the following four fans according to their comprehensive performance in three dimensions: Pilot, Overtaker, Explorer, and Chance-seeker.

As emerging technologies are in a period of rapid growth and have high uncertainty, the CTF diagrams for each sub-field need to be updated on a regular basis.

The purpose of the supplier evaluation is to provide information on the current state of the company to the purchasing party and wide-ranging industry participants (such as investment organizations) to aid decision making. The Cutting-edge Tech Fan (CTF) model of future technology evaluation is used to assess suppliers from multiple dimensions including technology (including technology readiness and R&D technology reserves), market (market development and market share), and comprehensive accumulation of the enterprise.

Scoring guidelines for the CTF model

Maturity of Technology

Commercialization of Technology

Hidden Attribute

Maturity of Technology

Technology: the leading position of a vendor's technologies and/or terminal products. The evaluation indicators, which can be provided by both direct selling and distribution selling, including product's technical indicators, performance, quality, reliability, etc.

Team: with the technical background, influence, creativity, and output efficiency of the vendor's core technical team members, they can effectively carry out the transformation of technological achievements and accelerate the iteration of technology, keeping the technology at a high level of competitiveness.

Research & Development Input: the vendor obtained the fundings from the external support and the accumulations that were generated by itself, which allow the vendor investing on developing the new technologies, so as to build up the technical barriers.

Innovation: coordinating various resources, technologies, and capital owned by vendor ensures that, the vendor owns better capabilities to carry out investments, resource synergies, and strategic defense or attack.

Technology Strategy: the vendor has deep understandings of the technology and product in the relevant technical field and owns clear strategy plan. Based on the strategy plan, the vendor specifies the roadmap of technology and is able to fulfill its commitments.

Commercialization of Technology

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Market Understanding: the supplier has a good understanding of the customer's requirements through customer feedbacks and market trends, then the supplier transforms these into products and services. Specifically, the supplier is able to develop and deliver the appropriate products in accordance with the customer's phased demands, with continuous improvements in cost, performance, and service.

Marketing Strategy: the supplier has a clear marketing strategy, which is consistently communicated within the organization and through the external marketing channels. The core goal of the supplier's marketing execution is to influence customers' cognition and recognition of its brand, business, and products. Such core goals can be achieved through targeted plans and strategies, which is driven by a combination of advertising, campaign and thought leadership.

Business Model: the supplier offers products or services that meet the needs of the customer and create value for them. This operation system is logical and feasible, so as to ensure the sustainable development of the business.

Vertical/Industry Matching: the supplier assembles the necessary resources, technologies, and products to meet the particular needs of each market segment (including vertical markets); develops products and services in a targeted manner and make value propositions.

Customer Evaluation: the supplier proactively invites customers to evaluate their experience with new products and uses this feedback to establish, develop and administer customer relationships, as well as improve its products and services. Specifically, this includes the achievement of the performance targets of the new technology products, the technical support program (and its quality), the satisfaction of the demand fulfillment, and the timeliness of service.

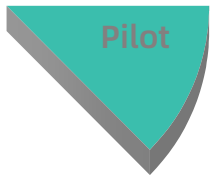
Hidden Attribute

Technology Influence: the technology providers are able to deliver values that reflect their commitment to privacy protection, empathy, equality and inclusiveness. Their values can lead to the sharing of diversified technologies, resulting in technology equalities.

Overall Viability: the technology providers have been able to maintain healthy financial positions by relying on their commercial success and operating activities over the past years. They show their abilities that allow them to survive when facing the uncertainties of the relevant market and technological environment, which does not include the survival model that is mainly relying on the external financing.

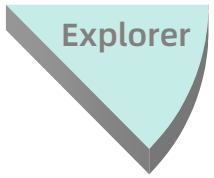
Market Reputation: a company's reputation is a collection of characteristics that reflect its past behavior. It can be expressed by the emotional response of customers, investors, employees and the general public towards the corporation, it also includes the subjective perception of a organization's features.

CTF

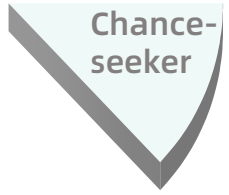


Companies in this sector are characterized by their large scale, and they have accumulated a lot of experience in the development of previous technology tracks, which has laid a solid foundation for them to enter new frontier technology fields. They have the ability and resources to lead a new wave of cutting-edge technologies and have the potential to have a profound impact on the future direction of the industry.

Companies in this sector have begun to take shape after a period of development, they get advantages out of their powerful research and development strengths. Because of their bunch of buildup about particular technologies, it's reasonable to expect that these companies could 'be promoted' to the Pilot sector in the future.



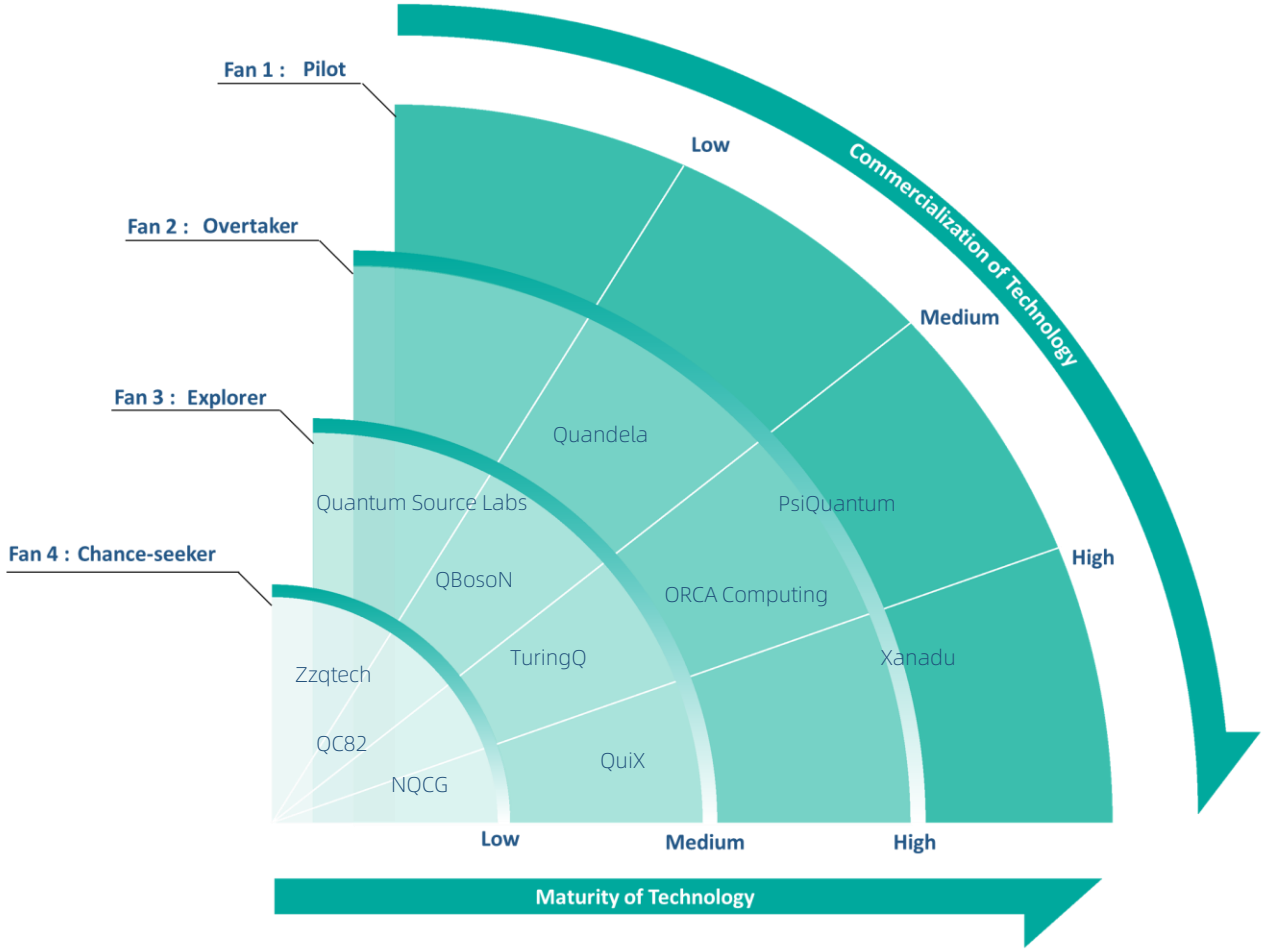
Companies in this sector have relatively small scale, however, it embarked on the emerging technology development track earlier. The development of the particular technology is still at early stage. Compared to Pilot and Overtaker, they usually fall short in terms of overall technical strength.



Companies in this sector has a keen business sense. It is a newly established company in the industry, so its size is small, but its founding team members have certain resources for the company to develop in the new track. There is currently no engineering prototype of the product, and no or little marketing.

List of Exhibits

CTF – Photonic Quantum Computing



Typical Enterprise Analysis-Pilot of Photonic QC

PsiQuantum

PsiQuantum has a goal to build the world's first useful quantum computer with over 1 million qubits. In 2022, PsiQuantum announced a breakthrough in architectures for error-corrected quantum computing, called the Active

XANADU

Xanadu have developed a novel type of quantum computer based on photonics, utilizing squeezed states and silicon photonic devices. In 2023, Xanadu achieved significant milestones, including Launching the first public cloud-deployed

Typical Enterprise Analysis-Overtaker of Photonic QC

ORCA Computing uses fiber-optic connections for modular quantum processors, and room-temperature operation. In 2023, they launched their PT series of rack-mounted, air-cooled, standard fiber-optic component-based photonic quantum

Quandela's technological is the result of more than 20 years of groundbreaking research in a variety of fields, including nanotechnology and photonic engineering. In 2023, they launched Prometheus, a high-quality single-photon source that is pivotal to

Typical Enterprise Analysis-Explorer of Photonic QC

QBosoN is specializing in the development of core devices for fully autonomous and controllable optical quantum computing. They have successfully developed the "Tiangong Quantum Brain," a coherent optical quantum computer with

Turing Quantum is specializing in optical quantum chips and quantum algorithms. They have developed an optical quantum chip based on lithium niobate thin film (LNOI) photonic chips and femtosecond laser direct writing technology, enabling the

Typical Enterprise Analysis-Chance Seeker of Photonic QC

NQCG

The Nordic Quantum Computing Group (NQCG) has a wide influence in the Nordic region and has close ties with leading technical universities and national research laboratories in the region. NQCG dedicated to building fully programmable

QC82

QC82 ‘s photonic continuous variable quantum computing (CVQC) is a leading technology for expanding quantum computers to millions of qubits for practical applications. The co-founders of QC82 have demonstrated the cluster state

Ordering Information

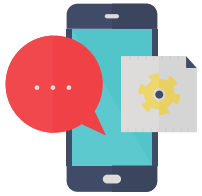
CTF for Quantum Computing

CTF Series Report

Electronic (1-5 users)	6,500.00 USD
Electronic (6-10 users)	9,200.00 USD
Electronic and 1 Hardcopy (1-5 users)	7,250.00 USD
Electronic and 1 Hardcopy (6-10 users)	9,950.00 USD

Explore Our Services

Our research team is deeply rooted in the Quantum Information Technology industry, boasting a continually updated and extensive database. Leveraging our vast experience, we provide insightful consulting services tailored to industry-specific needs. We are committed to remaining at the forefront of technological innovation, staying informed about the latest trends, and delivering relevant and actionable solutions for our clients.



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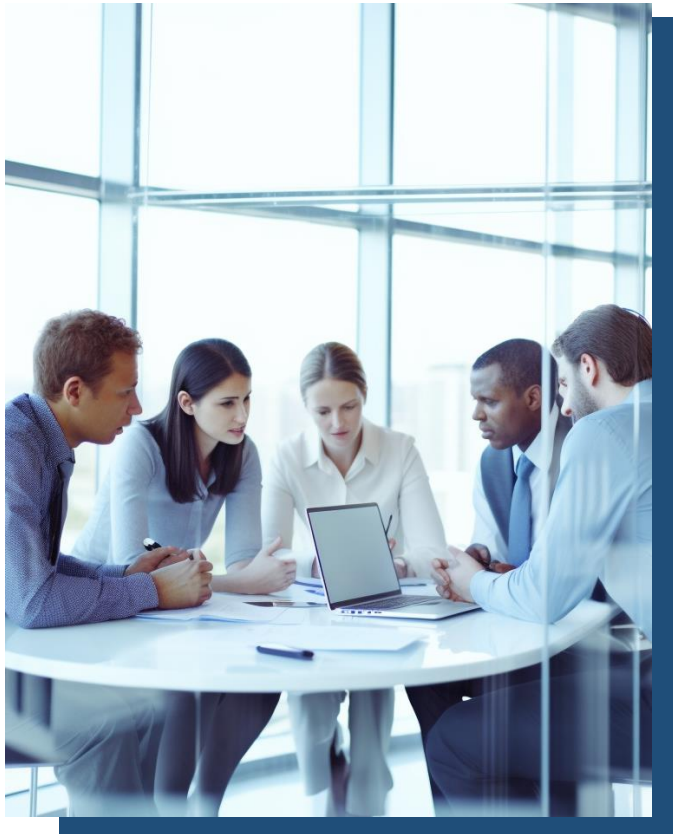
At ICV, we are passionately curious about new technologies and strive to deliver the most robust market data and insights to help our customers make informed strategic decisions.

We bring together deep intelligence across a wide range of capital-intensive industries and markets. By connecting data across variables, our analysts and industry specialists present our customers with a comprehensive view of their world.

This is the benefit of the new intelligence. We are able to isolate cause and effect, risk and opportunity in new ways that empower our customers to make well-informed decisions with greater confidence.



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