



# Company Overview

Scalable Systems Co., Ltd.

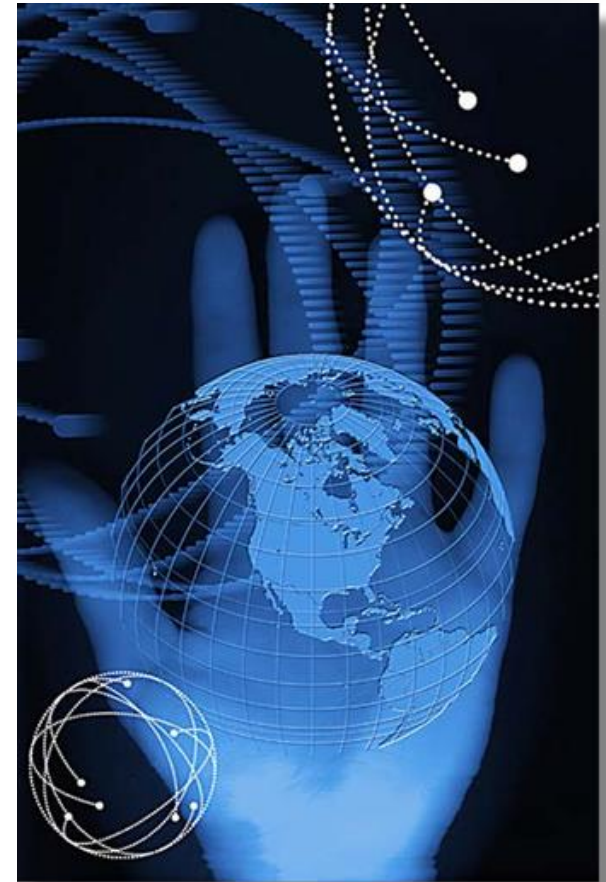
DIRECTION

NORTHEAST EAST SOUTHEAST SOUTH SOUTHWEST WEST

# Agenda



- Company Overview
  - SSTC : Scalable、 System、 Technology and Collaborations
- HP<sup>2</sup>C Products Business
- Consultation
  - Technology Consultation
    - Positioning and the worth of technology consultation
  - Consultation Service Introduction
    - The Three Pillars of Consultation: Information, project, marketing support..



# Business Background

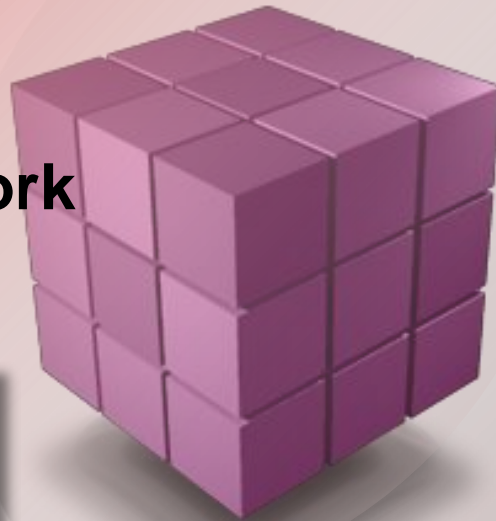


- **HP<sup>2</sup>C** : With the rapid adoption of scalable systems for high-end computing in the enterprise, a high-security and robust scalable platform that is easy to use, manage and operate has become critical. And these scalable systems are required to high performance and high productivity. We call the system which meets these two requirements - High Performance and High Productivity Computing - HP<sup>2</sup>C system.
- **High-End Computing Requirement** : Accelerating breakthrough ideas requires high performance and high productivity systems along with a high-security and robust operating environment designed for high efficiency. We free our customers from complicated management of systems and let them focus on their original tasks.

# HP<sup>2</sup>C : High Performance & Productivity



**High Performance**  
**Scalable Application**  
**Performance**  
**High Utilization of**  
**CPU**  
**High IO and Network**  
**Bandwidth**



## HP<sup>2</sup>C System



**High Productivity**  
**‘Easy to Use’**  
**Administration and**  
**Management**  
**Certified Applications**  
**Open Source**

# Our Company . . . . .



## Vision

Scalable systems with high performance and high productivity contribute to developments of new business by achieving business breakthrough. It is this kind of HP2C system that is required in enterprise computing today.

## Mission

Making the most of our experience in HPC business, we support our customers and partners to establish TRUE scalable systems based on our HP2C concept. Scalable Systems provides perfect solutions for business and workflow of our customers.

## Position

It makes us so unique that, with our advantages in HPC business, we can provide the most suitable HPC solution to every workflow of every customer, which is improved by our consultations on new technologies and effective use of them.

# Company - Vision



- HP<sup>2</sup>C - High Performance with High Productivity
  - development of new business
  - maximize ROI and TCO
  - scalable systems
  - technological breakthrough
- HP2C system is now required in enterprise computing for being ahead of competitors.
- “Let users be users, scientists be scientists, not cluster builders and maintainers.”

# Company - Mission



- By leveraging our experience in HPC business, we can support customers and partners to implement the REAL Scalable Systems applying the concept of HP<sup>2</sup>C
- Our consulting provides the value proposition and the technical solution to maximize the workflow
- Our support will show how to introduce Scalable Systems more effectively in the enterprise.
- The clear focus on scalable HP<sup>2</sup>C systems is clearly reflected in the name of the company “Scalable Systems Co., Ltd.”

# Company - Position



- By consulting on new technologies and showing how to apply the new technologies in the enterprise, we provide more value to our customers.
- Our company offers a unique service in the HPC business, and we utilize this strength at the maximum extent.
- Our consulting provides the value proposition and the technical solution to maximize the workflow.



# SSTC Business Model



- Before the end of CY06....
  - The **ONLY** focus of this company is providing **business and technical consulting to enterprises.**
    - this company is not selling HW/SW
    - this company offers independent and unbiased consulting
- And now ...
  - The focus of this company is providing **business and technical consulting to enterprises and selling value HW/SW products.**

# Career 's Highlights



In 1986 since joining Cray Research, I've been working for various HPC projects and HPC dealing with solving very difficult and complex problems in Japan. That it could contribute to Cray's success of the business in Japan. Cray Research and Silicon Graphics was merged in 1996, so I have worked in SGI Japan and taken charge of HPC business in SGI Japan. Also I have been confident it could large contribute to SGI's server and supercomputer business in Japan. After these 19 years HPC business in Cray and SGI, I have decided to establish new company for technology consultation. This new company is based on these experiences for 19 years for high end computing and also much experience as CTO - Chief Technology Office in SGI Japan. We will support how to introduce Scalable Systems more effectively by technology consulting. It designated company name the "Scalable Systems Co., Ltd." for aiming toward scalable systems.

Takahiko Tomuro  
Representative Director



Scalable Systems Co., Ltd.

# HP<sup>2</sup>C PRODDUCTS BUSINESS

# 'Closing the Gap'



## Shared Memory

**【Good】**

Easy to Use

Easy to Manage

**【Bad】**

Scalability

Cost

Compatibility

## Cluster

**【Good】**

Scalability

Cost

**【Bad】**

Management

Programming

Operation(Install&Upgrade)

Workstation  
Server

HP<sup>2</sup>C Products :

Cluster

#Processors

2

4

8

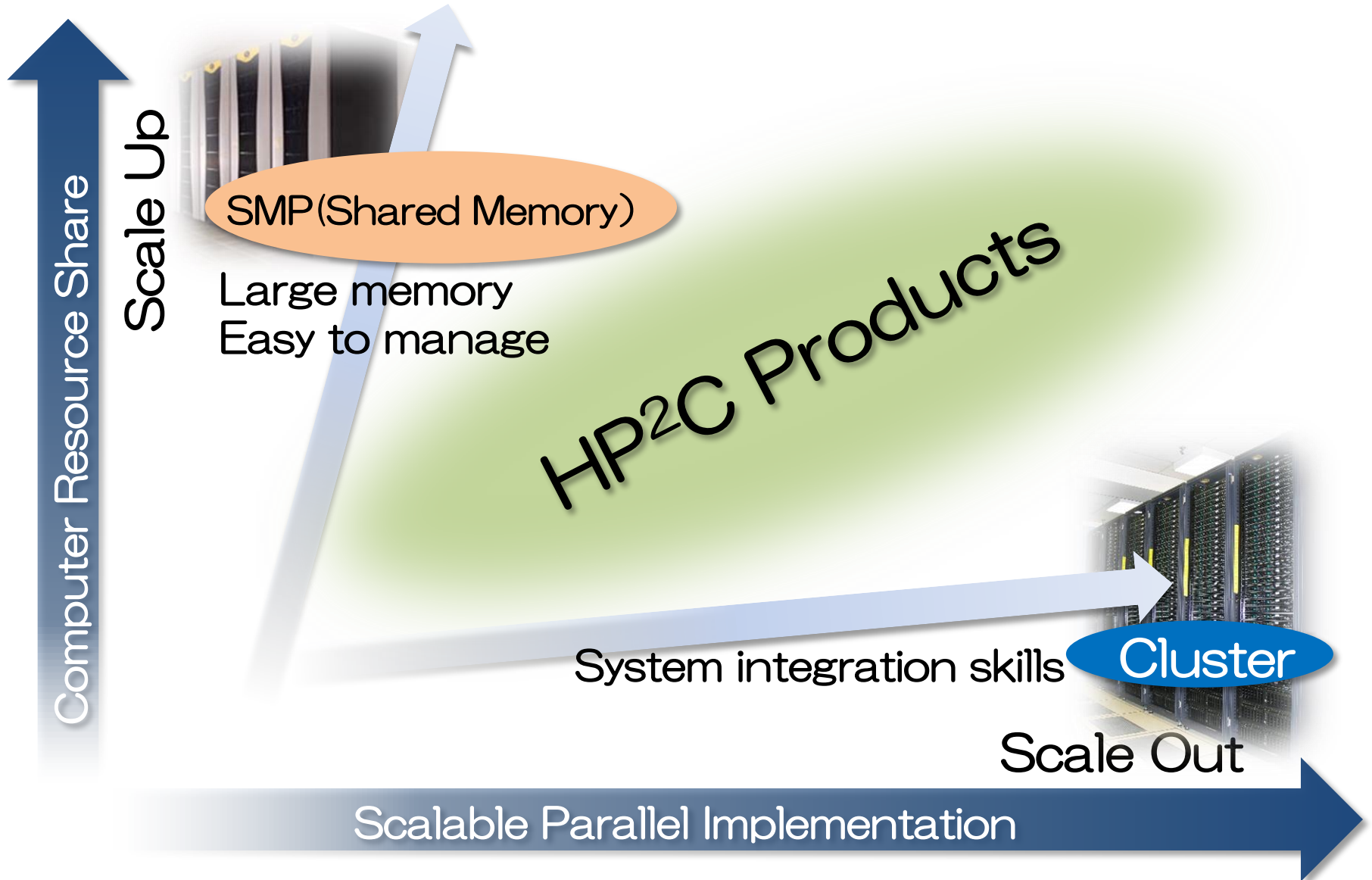
16

32

64

128

# HP<sup>2</sup>C Products



# HP<sup>2</sup>C Products line



## ScaleMP™

Scalable SMP  
Large Memory  
Single Image  
Dynamic provisioning



Scalable Parallel Storage  
Global Name Space

## ORION RS



## ActiveStor

## ORION HF



High Density  
Latest CPU and Chipset  
High Performance  
Interconnect

## KRONOS



## CIARA

Accelerated Computing  
Latest CPU, Chipset  
and Overclocking  
Optimized for customer workload

## Scale Out

## Scalable Parallel Implementation

Computer Resource Share

Scale Up

# HP<sup>2</sup>C製品概要とその特徴



## Orion RS Server Cluster

- From component selection to the latest in system architecture, ORION RS Servers are designed to provide you with uninterrupted service, and help you meet all your business needs.



## Panasas Scale-Out NAS

- The Panasas ActiveStor Scale-Out NAS products meet the demands of a massively parallel data movement by offering scalable performance and capacity via an object-based approach to Storage.



## Kronos/Orion HF Server&WS

- CIARA's proprietary design and optimization turns off all unnecessary cores and locks the remaining ones into an optimized mode.



## vSMP Foundation Virtualization

- The innovative Versatile SMP (vSMP) architecture aggregates multiple x86 systems into a single virtual x86 system, delivering an industry-standard, high-end symmetric multiprocessor (SMP) computer.

**Support , Service and Consultation**

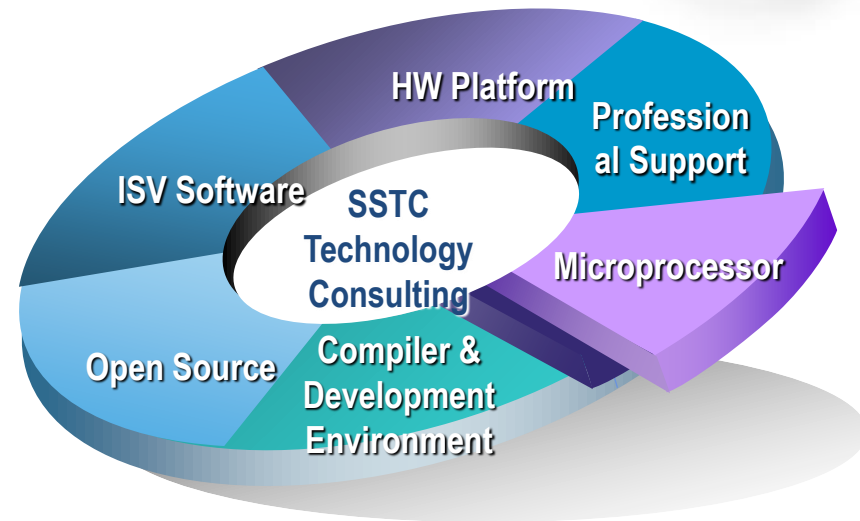
# Support Service



- We provide products support service and also helps troubleshoot the hardware or, optionally, the core operating systems (Microsoft Windows, Red Hat and compatible distribution).







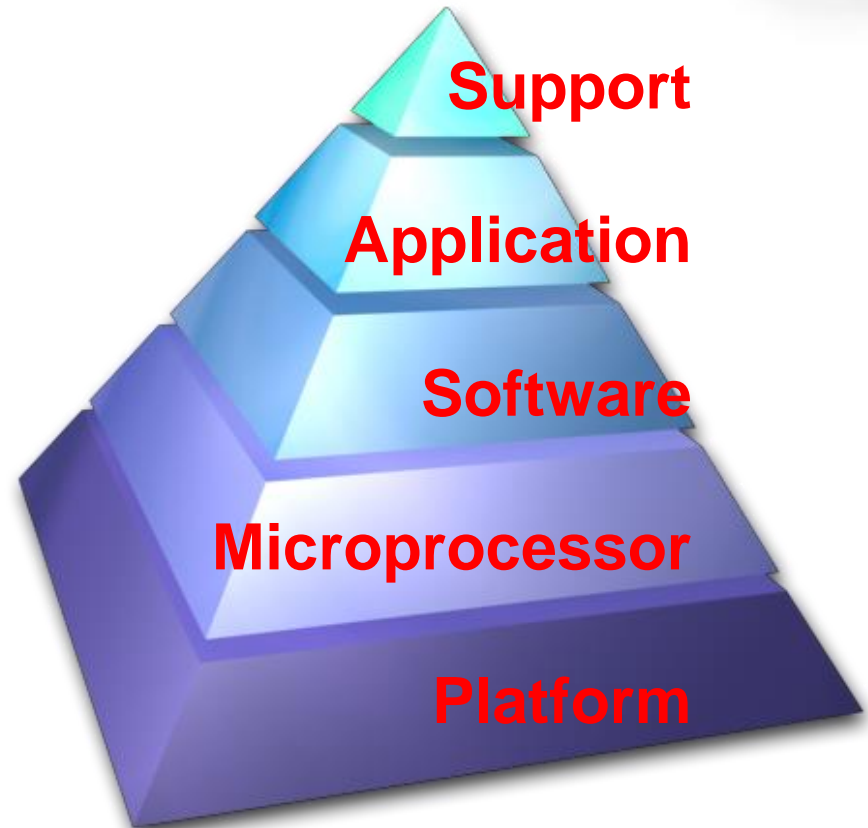
Scalable Systems Co., Ltd.

# POSITIONING AND THE WORTH OF TECHNOLOGY CONSULTATION

# System Integrations



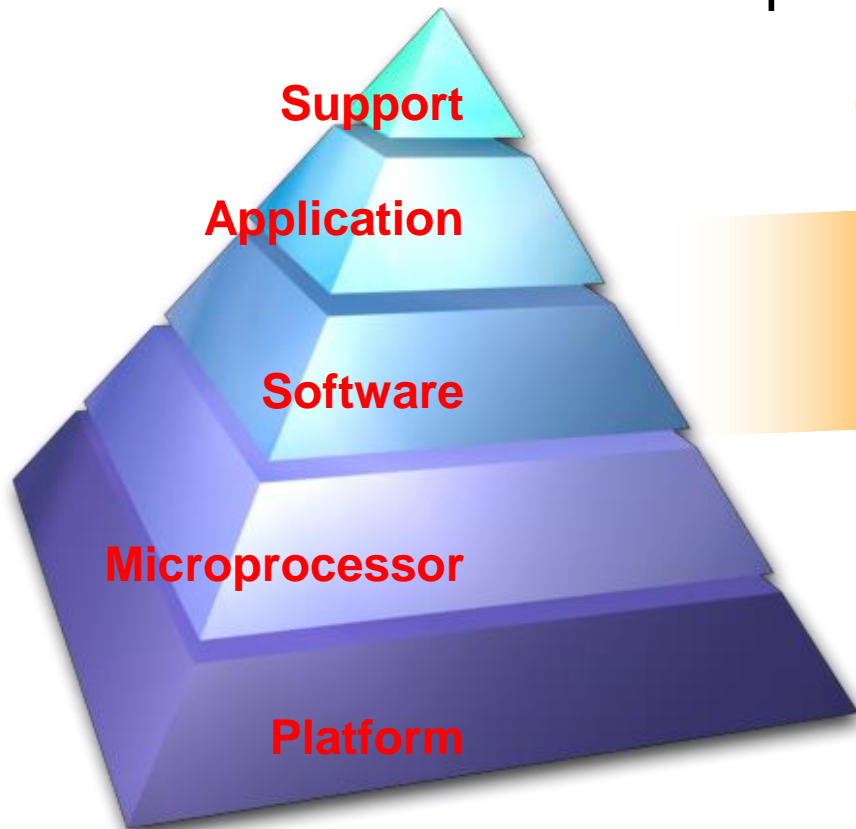
- Can Vertical System Integration (i.e. stacking different technology) offer to the customer the required benefits?



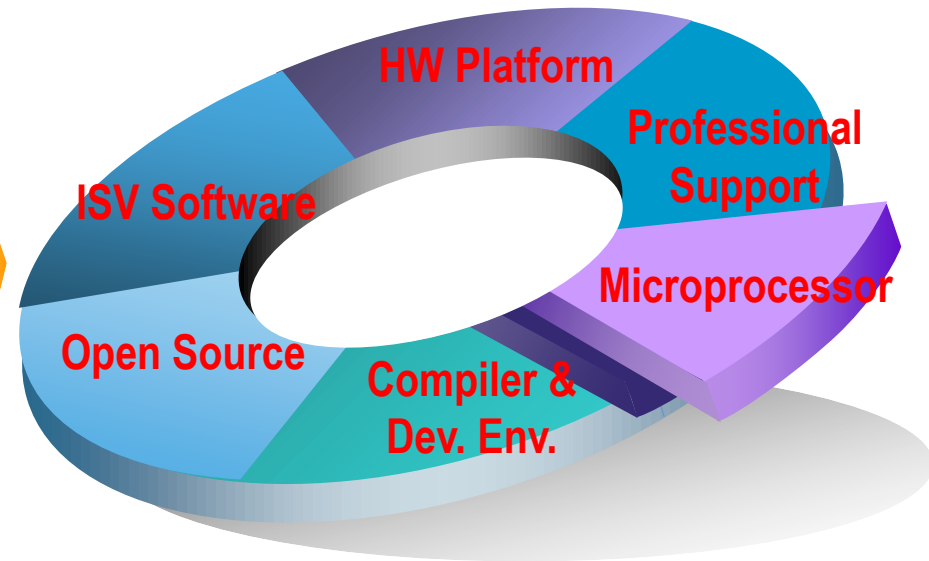
# HPC System Integration



- Our consulting optimizes the mutual cooperation of technology and raises the value of individual technologies to meet or exceed the planned purposes.



**Vertical and pyramid type**

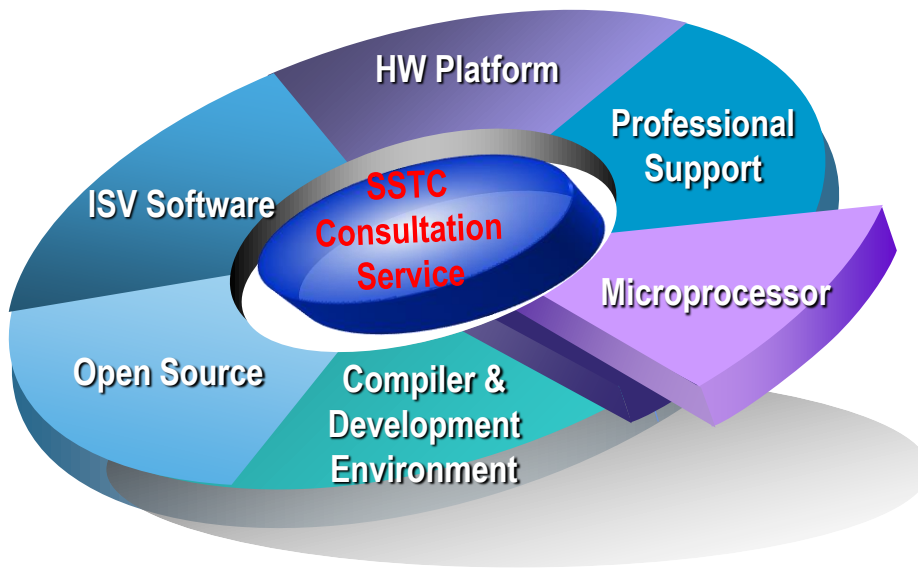


**Horizontal and mesh type**

# HPC System Integration



## Our Answer.....



- The fact that the consultation which optimizes the mutual cooperation of technology, raises the value of individual technology's done is our purposes.
- Cooperation of complicated technology is assured, among those as an optimum solution to propose, it becomes the key which leads project to success.

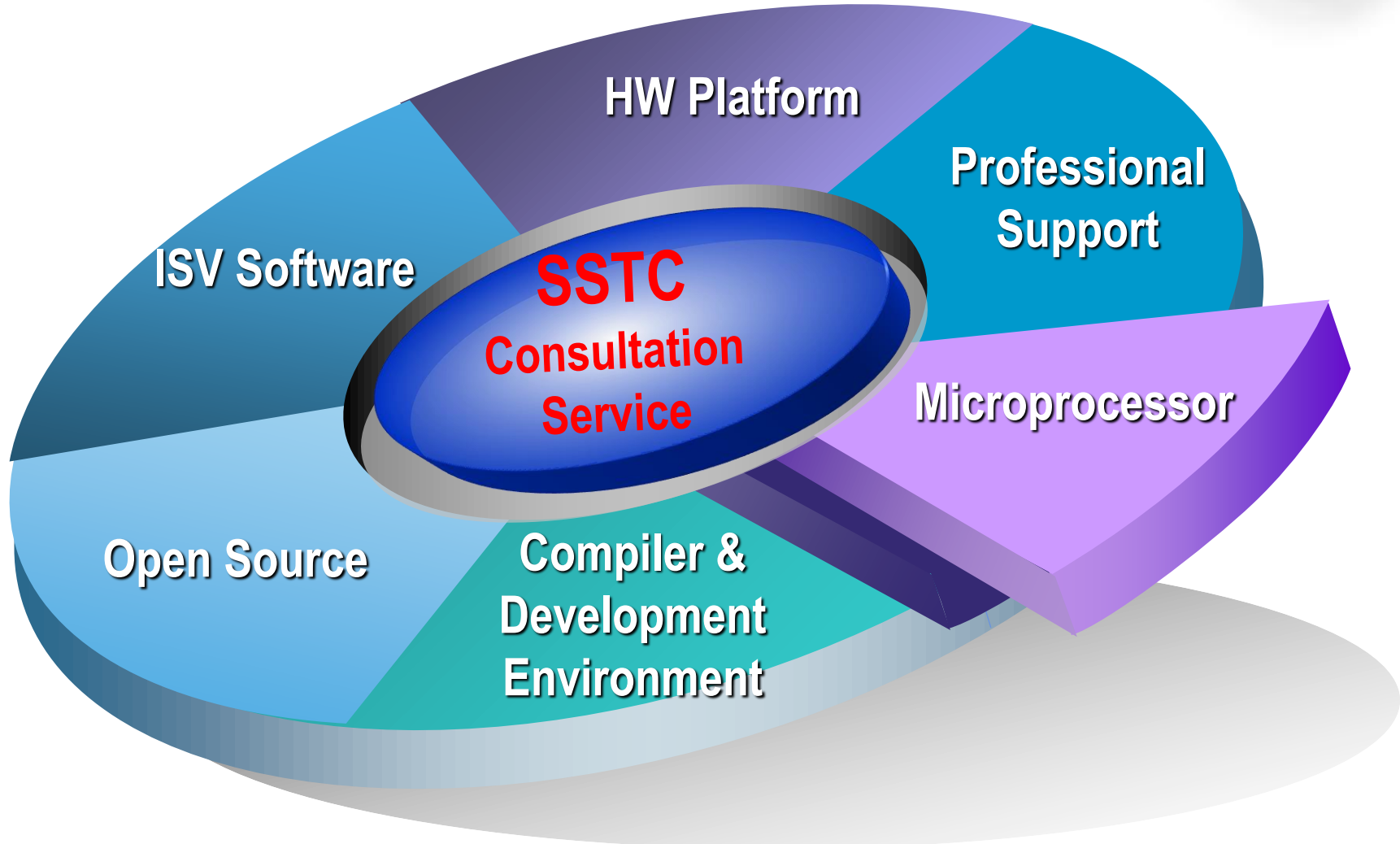
# System Integrations



- The explanation "The technology is piled up and offer it to the customer" is general with system integration. However, an individual technology is deeply related each other actually. The technology is not simply piled up but it is necessary to attempt cooperation between technologies.
- The system integration is revolutionized from "Vertical and pyramid type" to "Horizontal and mesh type" by making the IT technology a global standard.

"Vertical and pyramid type" to  
"Horizontal and mesh type"

# SSTC : Technology “Hub”





# Technology “Hub” for your projects

- In the technology consultation that Scalable Systems Co., Ltd. offers, it has aimed to optimize the collaboration of the technology, and to enhance the value of an individual technology.
- Mutual cooperation for the construction of a scalable system that can achieve higher productivity is enabled to bear the function as "Hub" of the technology to construct a virtual organization flexibly, and to be attempted more intimately.

# Consulting technology



- Takes into exam the road map of a technology and a product, and advises about the business strategy
- Advises about planning a business strategy, and/or changes on a business process
- Evaluates new technology and its impact in the business workflow

Consulting for maximizing the benefits  
of technology



# Support of technical advantage appeal



- Support to improve a technical visibility.
  - Make technical contributions to standardization activities
  - Contribute with technical articles to magazines, continuously
- Support to obtain trust from customers to whom you sold the system.
  - High-level technical overview of concepts, architectures, and products to customers
  - Understand a request from customers and assess the technical merits, and connect them to a system proposal
  - High-level explanation of the latest installation and business status

# Presentation for customers



- Write and update a presentation and white paper reflecting latest technical trend, continuously
  - Explain about the above materials effectively
  - Grasp questions and requirements exactly and respond to them (It is very important to respond to feedbacks from customers)
- Support how to introduce an article about an event more effectively by including technical contents into it

# ISV Applications



- Offer information and update timely
- Support installation of ISV application
- ISV application is very important in solution deployment.
- Support making a situation and an environment in which you can pull out positive support and application support from ISV.
- Support running demo system etc.

# The role of Technology Consultation



- Cooperation of complicated technology is assured, among those as an optimum solution to propose, it becomes the key which leads project to success.
- The role of Technology Consultation
  - Appropriate technical advice
  - Coordinator of Technology  
(work with partner and customers)



Scalable Systems Co., Ltd.

# **CONSULTATION SERVICE INTRODUCTION**

# Technology Consultation



## Project Support

It introduces the large-scale system and technical it advises in strategic business talk and it supports. Integration of the system whose added value is high by assuring the cooperation of technology, is supported.



## Business Support

Plan of the business strategy and the advice regarding the reform of business process are done. Proposing the solution which can assure the optimization of workflow.



## Technology Evaluation

Appraise new technology in the business. Risk and the advantage of adopting new technology are appraised, introduction with optimum timing is supported.



## Technology Roadmap

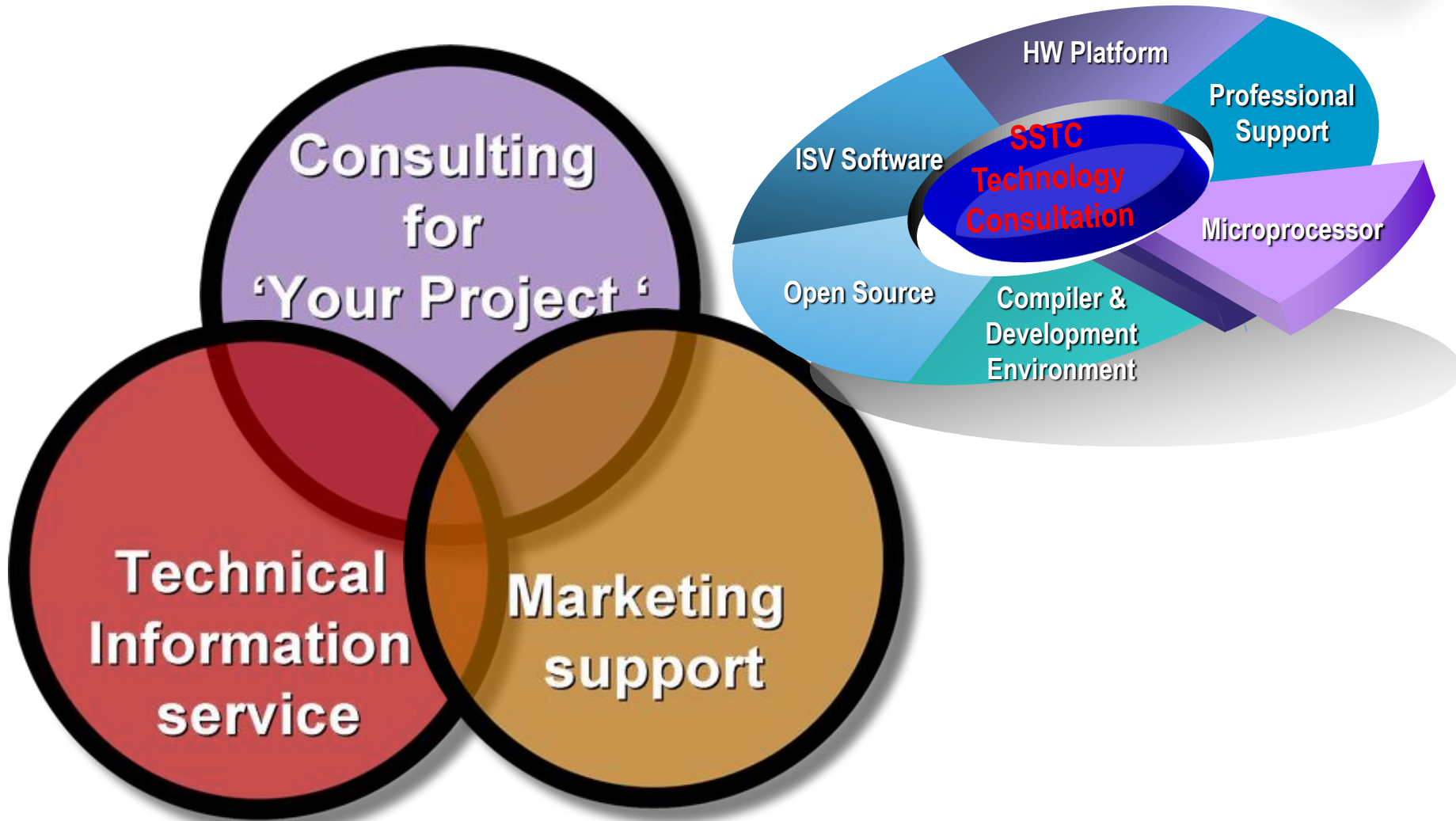
Concerning the examination of the technical product roadmap over future and the development with respect to business it advises.

# SSTC Consulting



- Consulting and technical assistances offered from us are the following categories
  1. Technical Information service
  2. Marketing support (including analysis of the business environment)
  3. Consulting for '***Your Project***'

# SSTC Technology Consultation

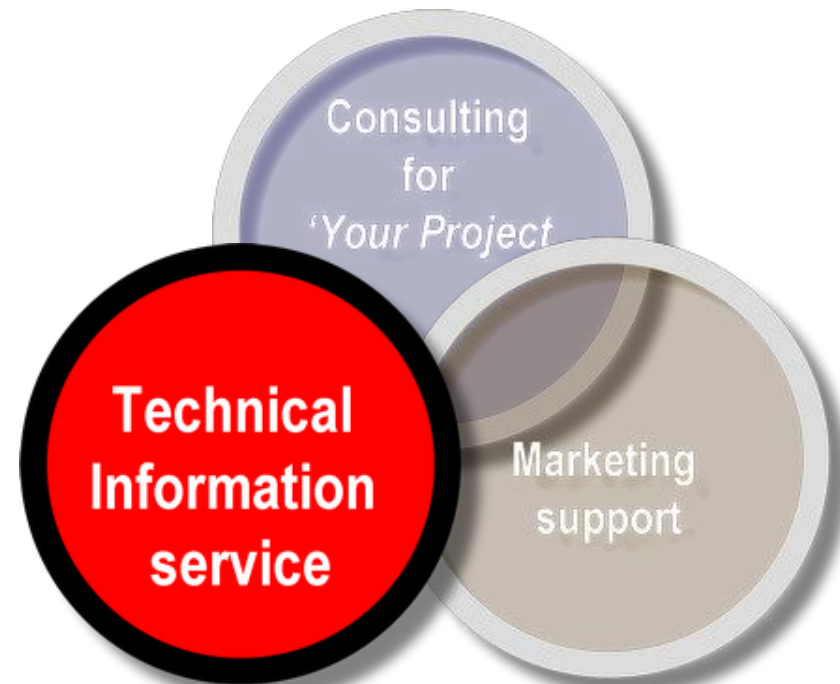




# Technical Information Service



- This service offers the newest technical information.
- Technical information service is providing wide variety topics for HPC, Technical computing and products.
  - Daily update WEB page and news letter will be provided.
  - Also mailing list and technical seminar will be provided.
- WEB Page access with membership.



# Marketing Support



- Support how to introduce an article about an event more effectively by including technical contents into it
- Write and update a presentation and white paper reflecting latest technical trend.
- Support to improve a technical visibility.
  - Contribute with technical articles to WEB continuously



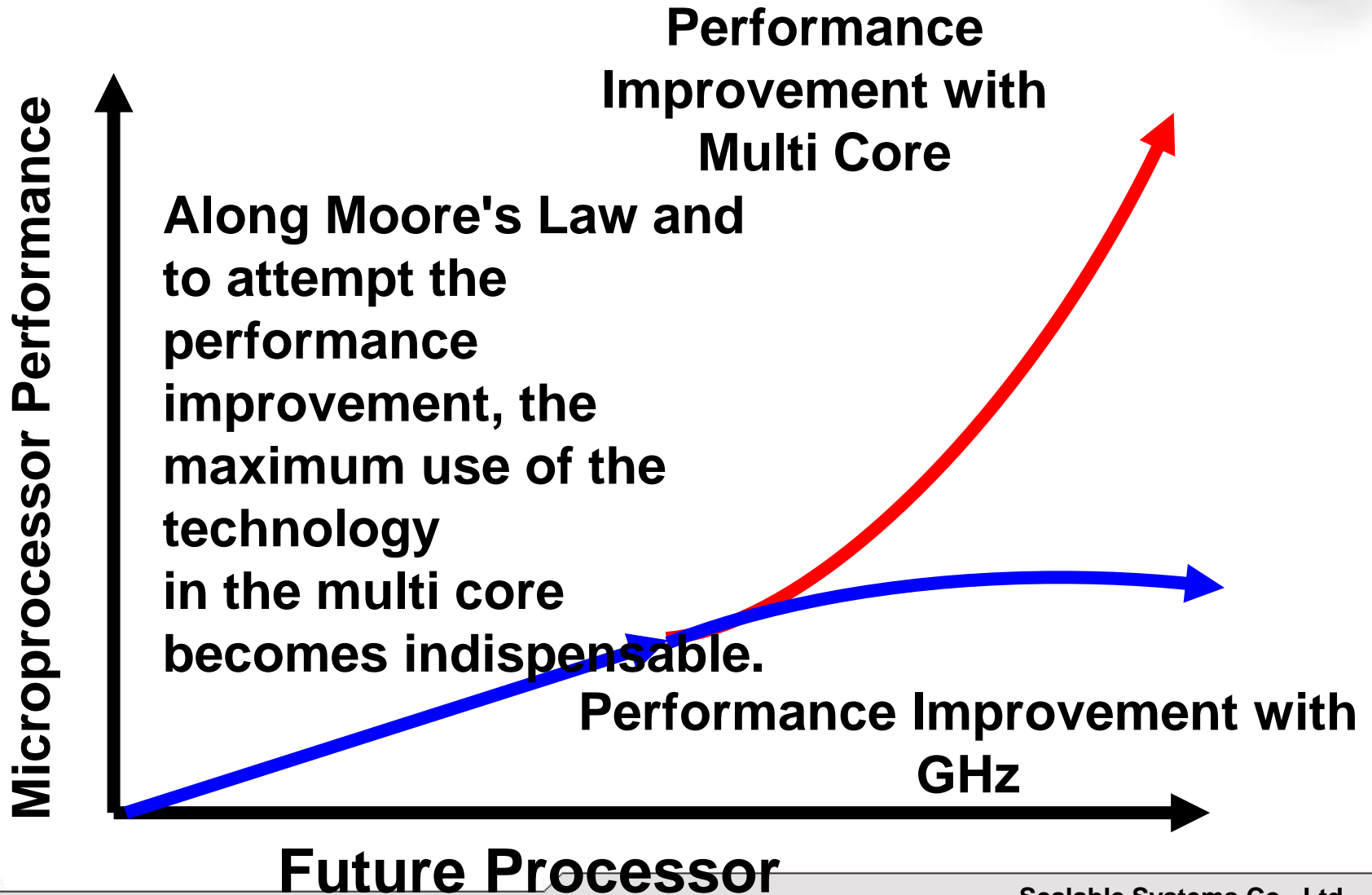
# HPC Whitepaper for you



- SSTC provides whitepaper, case studies, product brochures, user guide with own research to your prospects, partners or customers.
- Use SSTC experience to gain single click access to a deep archive of news and business information that provides a historical, global, and local perspective, which can help you.

Intel K.K HPC Resource Center web site  
<http://www.intel.com/jp/business/japan/feature/HPC/scalablereport/index.htm>  
\*Ts for HPC .. Intel Technology on HPC platform'  
By Takahiko Tomuro, SSTC

# GHz to MC - “Driving Parallelism”



# Intel Compiler User Guide for OpenMP Multithread programming



## インテル® コンパイラー OpenMP\* 入門

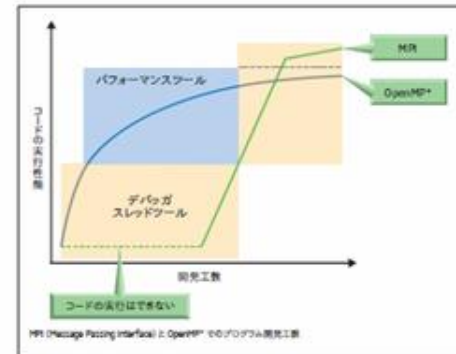
デュアルコア / マルチコア対応アプリケーション開発①

**OpenMP Users' Guide by SSTC.**  
These are available as a free  
download in Intel website

インテル® コンパイラー OpenMP\* 入門  
デュアルコア / マルチコア対応アプリケーション開発①

### 7. まとめ

「並列処理」と聞くと、何かプログラム上で特別なことを行っているような印象を受けるかもしれませんが、実際のところ、現在のシングルプロセッサ、シングルコアのマイクロプロセッサでも、プロセッサ・コア内部で多くの並列処理が行われており、最新の高速マイクロプロセッサでは、プロセッサ内に並列処理のための非常に多くのリソースを実装しています。これらのリソースを同時に利用することで、プログラムの高速実行を可能としています。インテル® Itanium® 2 プロセッサなどはそのもっとも顕著な例です。コンパイラーは高度にプログラムを解析し、各レベルでの並列化 (ILP) を数に高度なレベルで実現しています。



パフォーマンスに対する高度な要求に答える形で、プロセッサは高速化の一歩をたどってきました。しかし、現在プロセッサとメモリの性能差が広がるにつれて、様々なアプリケーションにおいて、メモリー・レイテンシーがパフォーマンス上のボトルネックになっています。またプロセッサの消費電力と発熱も大きな問題です。このような状況を打破するためにも、デュアルコアやマルチコアといった最新のプロセッサの実装技術が求められています。自動並列化、OpenMP\* でのプログラム処理の並列化は、このような時代の要求に応えるものです。コンパイラーの異なる進化によって、今後、これらの機能はさらに進化されています。

様々なレベルでの並列処理において、それらの並列処理技術を賢明に統合することで、アプリケーションの性能を大幅に向上させることが可能です。

株式会社プロフェール

スケラブルシステムズ株式会社

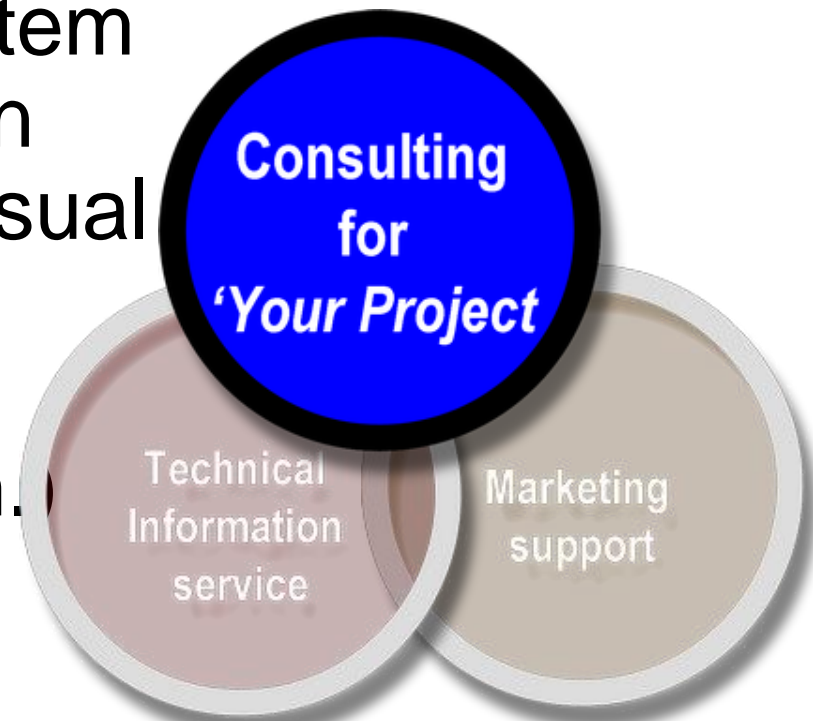
代表取締役 戸室 潤彦

約 30 年前にわたる MPC および VLSI コンピューティングの経験。  
約 50 における CPU (P-ファミリのアーキテクチャ) として幅広い製  
品開発に、2001 年 6 月、MPC および VLSI コンピューティングの広範囲  
の技術コンサルティングを提供する「スケラブルシステムズ株式会社」  
を設立。URL: <http://www.sstc.jp>

# Consulting for 'Your Project'



- Offer a wide range of consultations for specific projects
- Focus mainly presales activity and support system running after installation (System support after usual system installation is a category of technical information consultation.)



# Consulting for '*Your Project*'



Offer the following services and consulting works

1. Scalable Programming
2. Consultation for System Proposal.
3. Information for competition.
4. Benchmark support
5. System optimization
6. And more...

# Consulting for '*Your Project*'



1. Scalable Programming and code optimization
  - Programming training
  - Programming support for scalable systems
  - Compiler evaluation and support for more efficiency code generation. (Working with compiler supplier)
  - And more



# Consulting for '*Your Project*'



## 2. Consultation for System Proposal

- Offer consultation for various problems in system proposal
- Offer consultation for all of HW/SW/applications
- Concretely, clarify a problem, discuss measures against it, and also negotiate.
- Solve a problem in the short term by clarifying it

# Consulting for '*Your Project*'



## 3. Information for competition

- Offer consultation for competitive analysis needed in a specific case and measures against it
- Prepare materials which you can use in a proposal, presentation, etc.
- We can explain to a customer, if needed



## 4. Benchmark support

- Offer consultations for how to benchmark and how to present its result effectively
- If needed, optimize and parallelize a program as well

# Consulting for '*Your Project*'



5. Offer consultations for studies for a specific technical field and a market, and relations with them
  - Support making a sales plan to tire maker and support for it
  - Support for introducing a new technology into Japan market
  - Offer consultations for study for a large HPC system trend and a future sales plan of it

# Consulting for '*Your Project*'



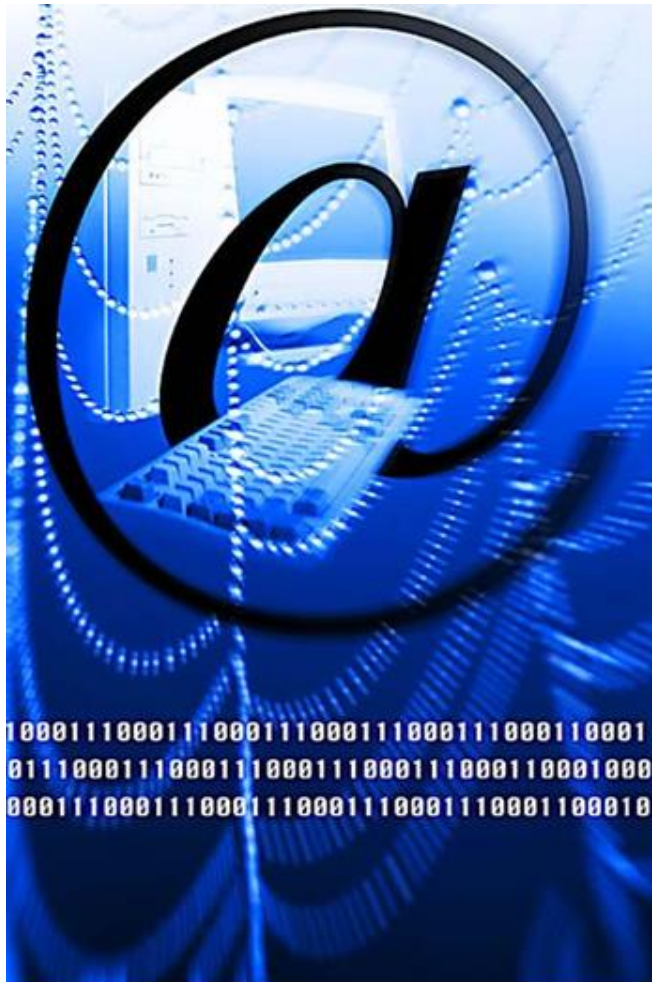
6. Offer consultations for system optimization
  - Analysis of bottleneck of system
  - Proposition of the system configuration which is optimum to work flow
  - Support of system tuning

# Consultation for End-Users



- Offer various consultations and proposals for realization of HP<sup>2</sup>C concept also for value customers
  - Correspond individually in each case about the concrete contents of consultation

# Our Company: As a summary



- **A new company will provide enterprise-wide consulting services and products focused at high-end computing**
- **The commitment of the company is contribute to the growth of our customers' business by providing best-in-class consulting services**



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2016年1月

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2016.1



# SSTC is our LOGO...



- Our company name, "Scalable Systems", represents our aim toward scalable HP<sup>2</sup>C systems.
- And our logo mark 'SSTC'.
- You all may realize "SS" is initial letters of our company name "Scalable Systems". "TC" is standing for our primary business, Technology Consultation. Also, Trust and Collaboration, which represent our goal we want to establish in relationships with our customers.