National Movement for Quality & Productivity Improvement (*Kaizen*)

--Introducing Diverse Models & Approaches--

Policy Formulation in Developing Countries
GRIPS Development Forum

Outline

1. National movement for quality & productivity improvement (kaizen)
   - Why necessary?
2. Two different approaches to *kaizen* national movement, and factors for their successes
   - Private-sector led: Japan (1950s-)
   - Government-led: Singapore (1980s-)
3. Other country cases, and lessons learned
   - Ethiopia, India, Mauritius, Botswana, Burkina Faso

What is National Movement?

- **National movement** is a policy involving the entire population for a decade or more, to transform the popular **mindset** toward hard work, team work, and creativity.
- It is not just a few projects, but a comprehensive drive with strong passion and deep commitment, involving everyone from top to bottom.

Why Necessary?

- Many developing countries suffer from weak private sector response.
  - Firms are too passive, waiting for customers or official support
  - Workers do not learn skills; job hopping is rampant
  - Short-term speculation is preferred over long-term investment in manufacturing technology
- If **mindset** does not change spontaneously, state may have to force it from the top until it becomes part of national culture.
- Forced movement is a double-edged sword. Some countries succeed brilliantly, but others fail. It must be designed with knowledge and care.

Why Necessary? (contd.)

- Examples of national movement include:
  - Japan—*kaizen* movement for quality & productivity improvement, as well as rural life improvement movement (in the 1950s)
  - South Korea—*Saemaul* Movement (in the 1970s) transforming Korean villages
  - Singapore—Productivity Movement (in the 1980s)

About *Kaizen* (改善)

- A Japanese philosophy that focuses on **continuous improvement** through all aspects of life.
- In business: incremental & continuous improvement with the involvement of the entire workforce
  - "If no money, use your brain": An effort to improve productivity, quality and cost without additional investment (= no new machines) first.
  - Participatory: Top/senior management, middle management, supervisors, and workers – all need to participate to continuously improve.
  - Bottom-up: specific ideas of improvement come from the front-line (e.g. factory floors).
  - Emphasis on process as well as results.

Source: Masaaki Imai, "Kaizen: The Key to Japan's Competitive Success", McGraw-Hill/Irwin, 1986.

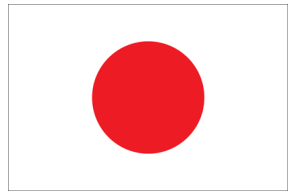
Examples of *Kaizen* Activities

- **5S**
  - *Seiri* (sort)
  - *Seiton* (systematize)
  - *Seiso* (sweep)
  - *Seiketsu* (scrub)
  - *Shitsuke* (self-discipline)
- **Quality Control (QC) Circles**
- **Layout improvement**, etc.

Source: Masaaki Imai (1986), p.4

Two Different Approaches to Generating National Movement

- **Private-sector led**: Japan's quality and productivity improvement movement (1950s-), learning from US & Europe, with US assistance
- **Government-led**: Singapore's productivity movement (1980s-), with Japanese assistance
- Common factors for success (despite their differences):
  - Strong personal commitment of top leader
  - Establishment of core organization(s) responsible for quality and productivity improvement
  - Massive campaign (for **mindset change**)
  - Supporting institutions and mechanisms at central and local levels
  - Authorized and standardized training programs and materials for those concerned
  - Developing private sector capability, esp. fostering private, productivity management consultants



Japan: Main Points

- Sense of urgency for industrial catch-up (after WW 2 devastation), by exporting manufacturing products
- Private sector took initiative to create core organizations for quality & productivity improvement
  - Strong leadership of top management of private organizations
  - Central and local-level networks for mass participation
- Collaborative relationships among govt., industry, & academia /within factories (btw. managers & workers)
- Absorptive capacity of companies to adopt and develop new technologies (incl. managers, engineers, & workers)
- Various national systems established to support quality and productivity improvement

Japan: Core Organizations for Quality and Productivity Improvement

Japan Productivity Center (JPC)

- Established in 1955 as a public-interest foundation; received US support during 1955-61
- Tripartite collaboration: govt., business, and labor unions
- Main role: productivity improvement (leading Productivity Movement)

(➔supporting Singapore's Productivity Movement under JICA project)

Union of Japanese Scientists and Engineers (JUSE)

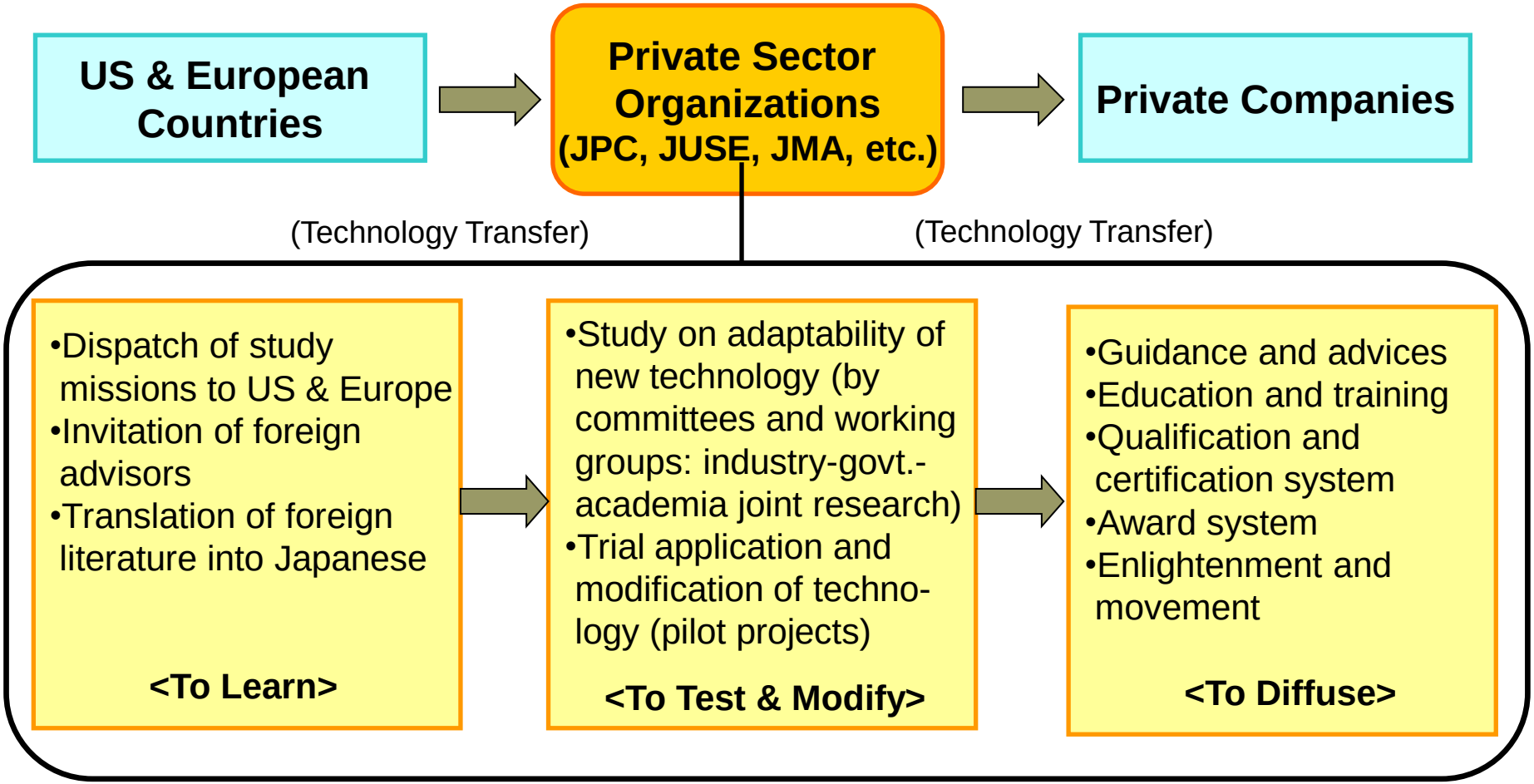
- Established in 1946, as an incorporated foundation
- Main role: quality improvement ("Deming Prize", QC Circles)

(➔supporting Burkina Faso (QCC) under WB/Japan PHRD fund project)

Japan Management Association (JMA)

- Established in 1942, as an incorporated association
- Main role: *noritsu* (efficiency) improvement, management innovation

Role of Private Sector Organizations in Introduction, Development and Diffusion of Foreign Technologies



Source: Adapted from Tsuyoshi Kikuchi “The Roles of Private Organizations in the Introduction, Development and Diffusion of Production Management Technology in Japan” (original paper published in the Bulletin of the Graduate School of International Cooperation Studies No. 4, 2011, Takushoku University).

Japan Productivity Center (JPC): 1955-

- In 1951, Mr. Goshi (who later became the first chairman of JPC) visited Europe as a member of Keizai Doyukai mission and learned Productivity Movement.
- Mr. Goshi was convinced of the need for Productivity Movement in Japan, and invited other major business organizations to jointly establish JPC.
- Govt. also recognized the need for JPC. In 1954, the Cabinet adopted a policy for productivity improvement.
- MITI Enterprise Bureau planned to set up a productivity organization. But, business leaders insisted that JPC be a private organization.
- In 1955, JPC was established, funded by both public and private sectors. Govt. will not interfere into JPC financial and personnel matters.
- Govt.-business coordination committee was established, chaired by a private sector representative and attended by vice ministers and JPC-selected private sector members.

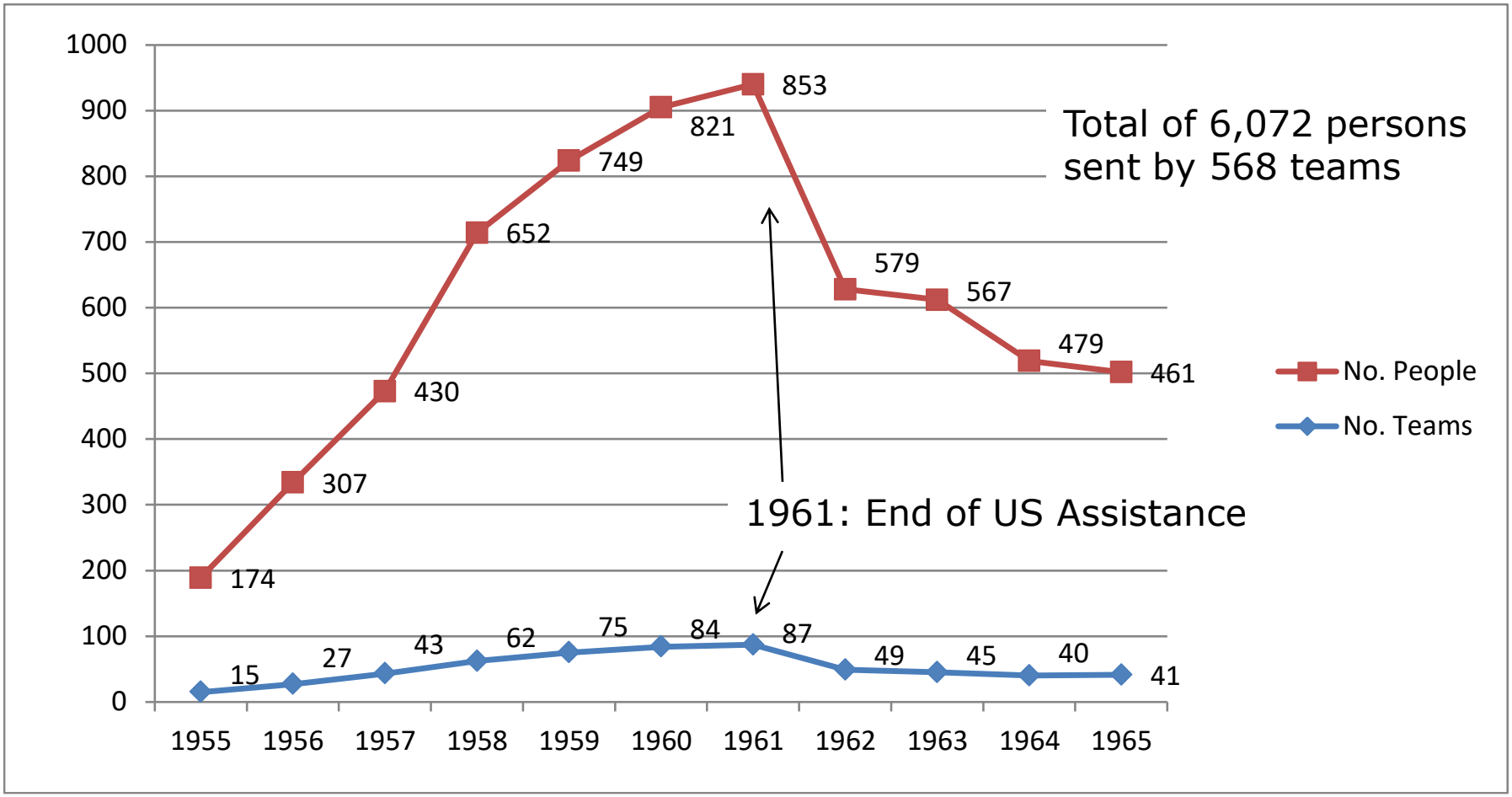
Trend of Study Missions Abroad by JPC (1955-60)

- A number of study missions were sent abroad and their findings were disseminated widely (organized by top mgt., industry-specific, specialization, labor unions, SMEs, etc.)

Fiscal year	Missions No.	Participants No.	o/w SMEs		Mission briefings	Participants (Mission briefings)
			Missions No.	Participants No.		
1955	15	174	5	58	33	10,020
1956	27	307	0	0	130	33,960
1957	43	430	4	46	180	27,420
1958	62	652	12	141	98	12,177
1959	75	749	13	137	74	7,894
1960	84	821	15	154	11	1,740
Total	306	3,133	49	536	526	93,211

Source: *History of Trade and Industry*, Vol. 6, Edited by the Ministry of Trade and Industry (original data come from various reports of the Japan Productivity Center)

Trend of Study Missions Abroad by JPC (1955-65)



- JPC published 170 volumes of Productivity Reports (1956-66), based on the findings of these overseas study missions.
- In parallel, JPC organized top management seminars by inviting foreign experts.

Source: Japan Productivity Center

Basic Productivity Philosophy: Three Guiding Principles of JPC

- Learning from US: technologies, management systems, labor-management relations
- Japanese way: adding "human-oriented concept" (no reference to "rationalization" or "efficiency")
  - Improved productivity should increase, but should not reduce, employment in the long run.
  - To improve productivity, labor and management must consult and work together with each other on an equal footing.
  - The benefits of improved productivity should be distributed fairly among management, labor and consumers.
- Creating tripartite governing structure: industry, unions, and academia (JPC Board)

Testing, Adaptation and Diffusion

- 1956: the Productivity Research Institute created within JPC
  - Publication of productivity statistics; productivity-related research & surveys
  - Formulation and dissemination of "cost-accounting" system for SME use
  - Training program for SME management consultants
- Publication of newsletters, productivity newspapers, books
- Management seminars, training courses, production of training materials, etc.
- 1956-60: 7 Regional Productivity Centers established
  - Regional Productivity Centers were independent of JPC financially; but 7 chairpersons sit on the JPC Board and frequent liaison meetings held to ensure coordination and cooperation.
- In parallel, Productivity Councils were set up at major cities

Financial Basis of JPC Activities
(quoted from a paper by Miyai & Kasuga (1999, JPC))

Initial stages

- US financial assistance (e.g., study missions, US expert visits)
- Japanese govt. subsidies (but never exceeded 30% of total revenue requirements)
- Private sector contributions (supporting membership fees)
- Income generated by JPC's own activities (initially, less than 50%)

Later

- Terminated in 1961.
- Gradually reduced to almost zero by 1970 (currently, overseas projects commissioned by the govt./JICA on a cost-plus-fee basis)
- Private sector contributions today represents less than 3% of total revenue
- About 95% of revenue today

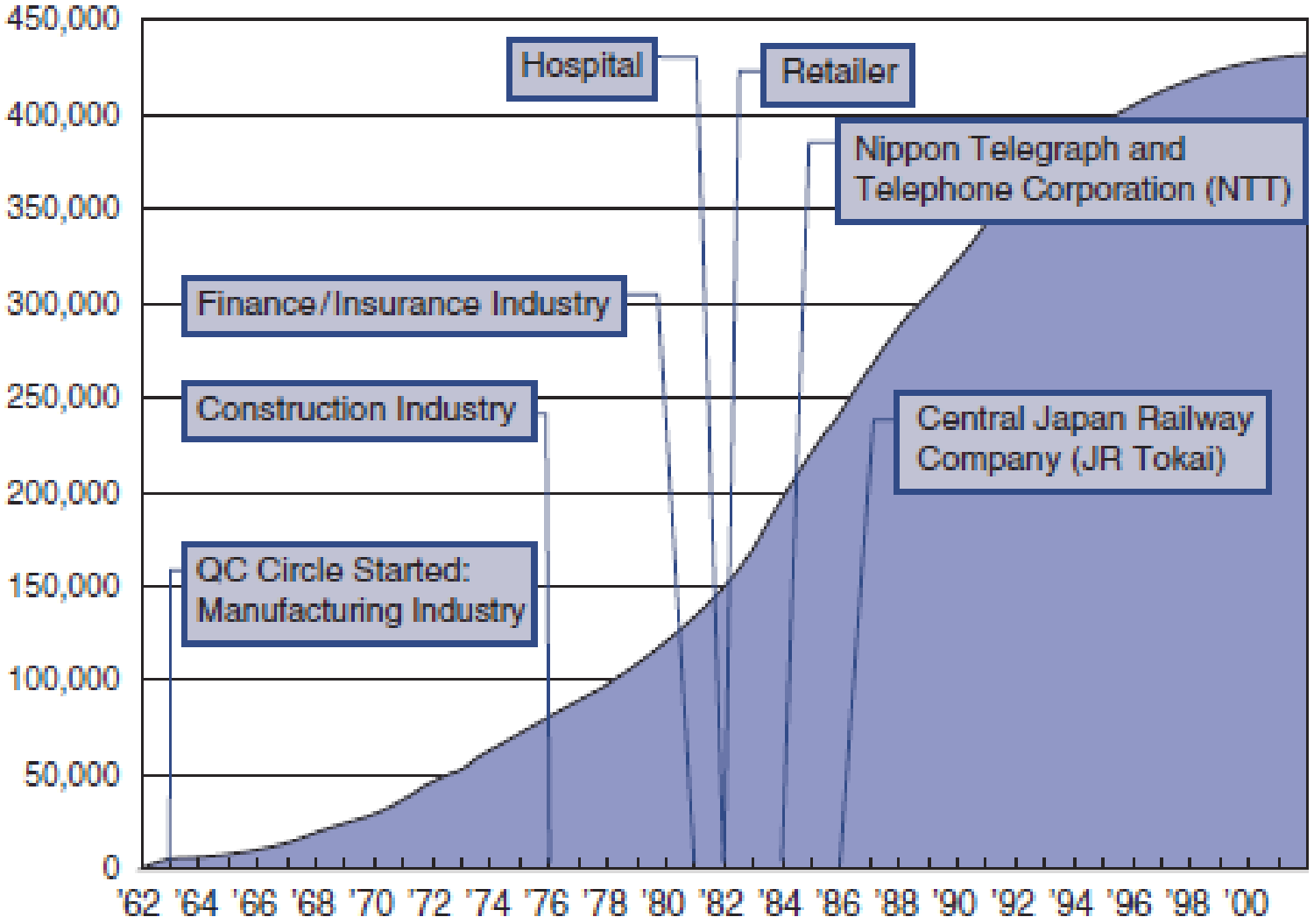
石川　一郎 氏
(1951年6月～1962年)

Union of Japanese Scientists and Engineers (JUSE): 1946-

デミング博士と小郷専務理事

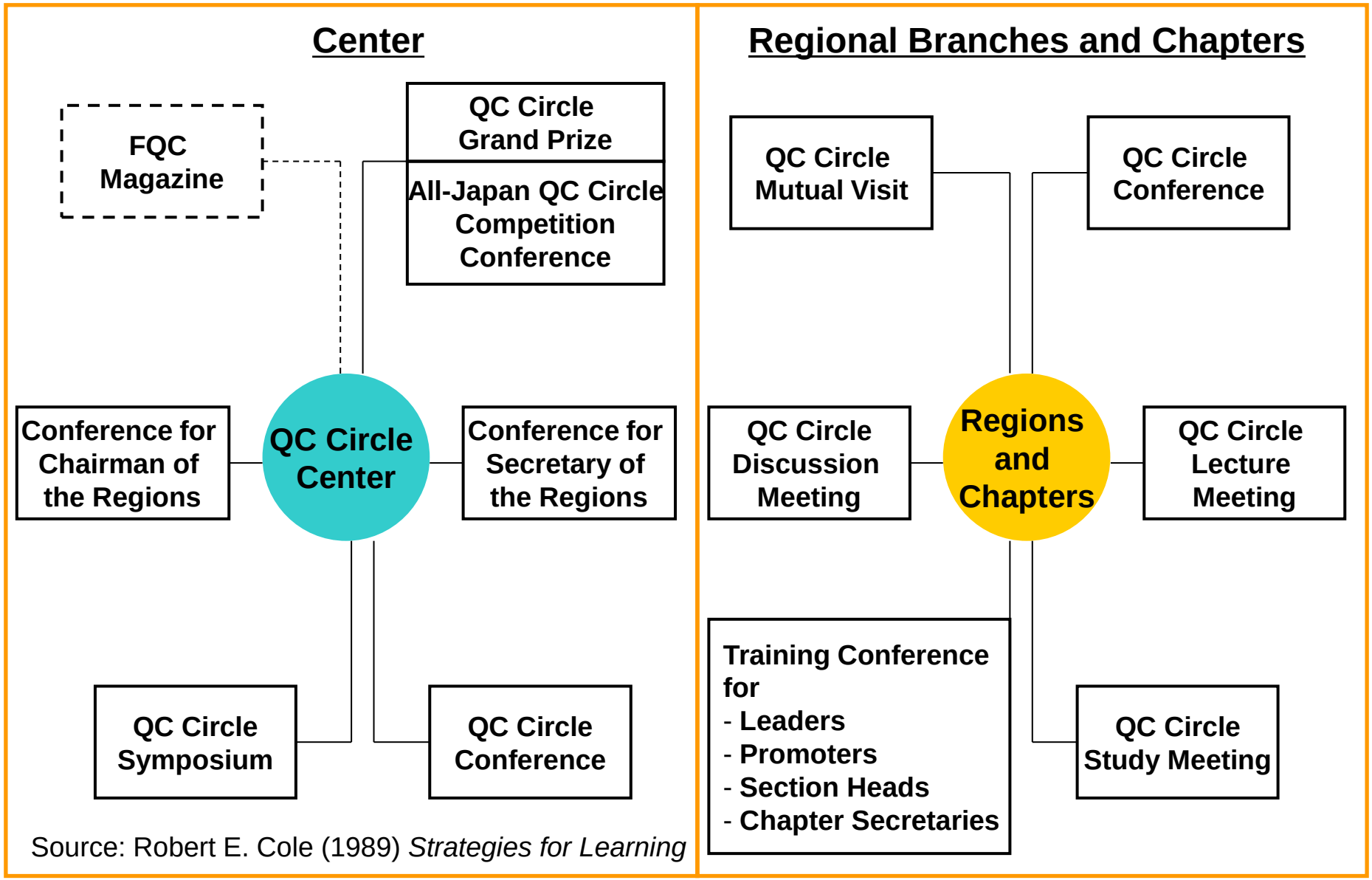
- Promoting the concept and techniques of quality control (QC) and statistical quality control in Japan.
  - Invited Drs. Deming and Juran (prominent American experts) for lecturers and seminars on statistical quality control methods and quality management, in 1950 and 1954 respectively.
  - Established "the Deming Prize" in 1951: award ceremony broadcasted on TV every year.
  - Established the Quality Control Research Group, composed of academic institutions, industry and govt.
- The QC movement introduced at the workshop level in the 1950s was developed into QC Circles by the 60s.
  - QC Circle Center and grass-root activities (Regions, Chapters)
- Promoted QC activities by broadcasting training programs on radio/TV and publishing journals.

Trend of QC Circles Registration by Industry in Japan



Source: Fukui et al. (2003, p.70), based on Union of Japanese Scientis and Engineers (2002).

Central and Local Level Networks of Japanese QC Circle Activities (JUSE)



Source: Robert E. Cole (1989) *Strategies for Learning*

The Role of Govt.: Establishing Supportive National Systems

- Mutually reinforcing, comprehensive approach
- Various national systems were established, to support the efforts for quality and productivity improvement
  - Standards system (JIS: Japan Industrial Standards)
  - Public research organizations (local-level testing and research centers to meet the industrial needs of local communities)
  - Export inspection system
  - *Shindan* system (SME management consultant system), etc.

Singapore: Main Points

- In the early 80s, the govt. launched Productivity Movement. Unlike Japan, the core organization was established by the govt.
- Productivity Movement was introduced not only to the business, but also to the public sector.
- JICA assistance from 1983 to 1990 (3 stages: awareness ➔action ➔ownership). Singapore now offers consultancy to developing countries.
- Key factors for success:
  - Strong personal commitment by Prime Minister
  - Massive campaign for awareness raising; later combined with company-based consultancy
  - Tripartite cooperation among the govt., industry, & labor unions
  - Producing private consultants from JICA trainees by installing proper system and incentives

History of Productivity-related, Core Organizations

Period	Organization	Remarks
1964	**Productivity Unit**, within Economic Development Board (EDB)	**65**:Charter for Industrial Progress, Productivity Code of Practice
1967-72	**National Productivity Center** - Autonomously-run division under EDB	**71**:Tripartite Interim Committee (to prepare NPB)
1972-95	**National Productivity Board (NPB)** - Statutory body, initially affiliated with Ministry of Labor and later with Ministry of Trade and Industry (MTI)	**73**:Singapore Productivity Association (SPA) formed **81**:*Productivity Movement* Launched; National Productivity Council (NPC) created
1996-2001	**Productivity Standard Board (PSB)** - Statutory body, affiliated with MTI	
2002-18	**Standards, Productivity and Innovation for Growth (SPRING)** - Statutory body, affiliated with MTI	
2018-present	**Enterprise Singapore (ESG)** - Statutory body, affiliated with MTI (merged with Int'l Enterprise Singapore)	New one-stop agency to promote SME development, innovation, new technologies, overseas market dvt, & training of mgt. leadership.

Singapore's Productivity Movement

- 1979: PM Lee Kuan Yew states "Workers here are not as proud of or as skilled in their jobs compared to Japanese or Germans."
- 1981: LKY studies Japanese practices; LKY met Mr. Goshi, then Chairman of the Japan Productivity Center (JPC) and asked for cooperation.

➔ ***Productivity Movement launched***

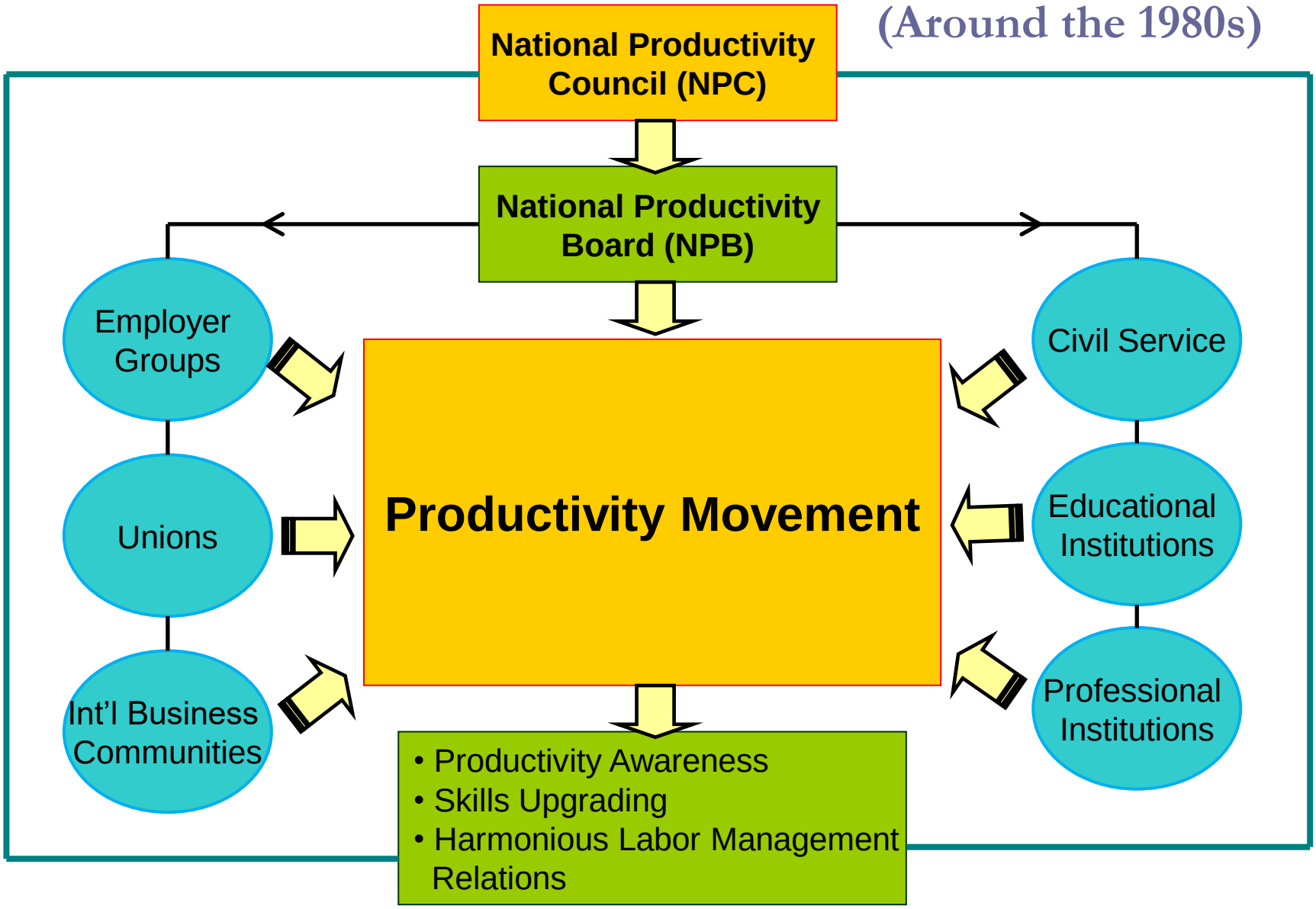
- 1981: National Productivity Council (NPC) established, with high-level representation from govt., employers, unions and academia
- 1981-87: November is designated as Productivity Month; LKY delivers his annual speech on productivity for seven consecutive years

Channels of Scaling-up and Institutionalization

- Public sector
  - Productivity campaign by the Central Productivity Committee; also linked with civil service reform programs
  - Involving MINDEF and the Singapore Armed Forces
- Labor unions
  - Productivity campaign by the NTUC Productivity Promotion Council
- Employer group
  - Involvement of business associations
- Training at educational institutions (polytechnic, etc.)
- Development of private, management consultants
- Incentives for companies
  - Workforce training (via Skills Development Fund)
  - Singapore Quality Award (for both public and private sectors)

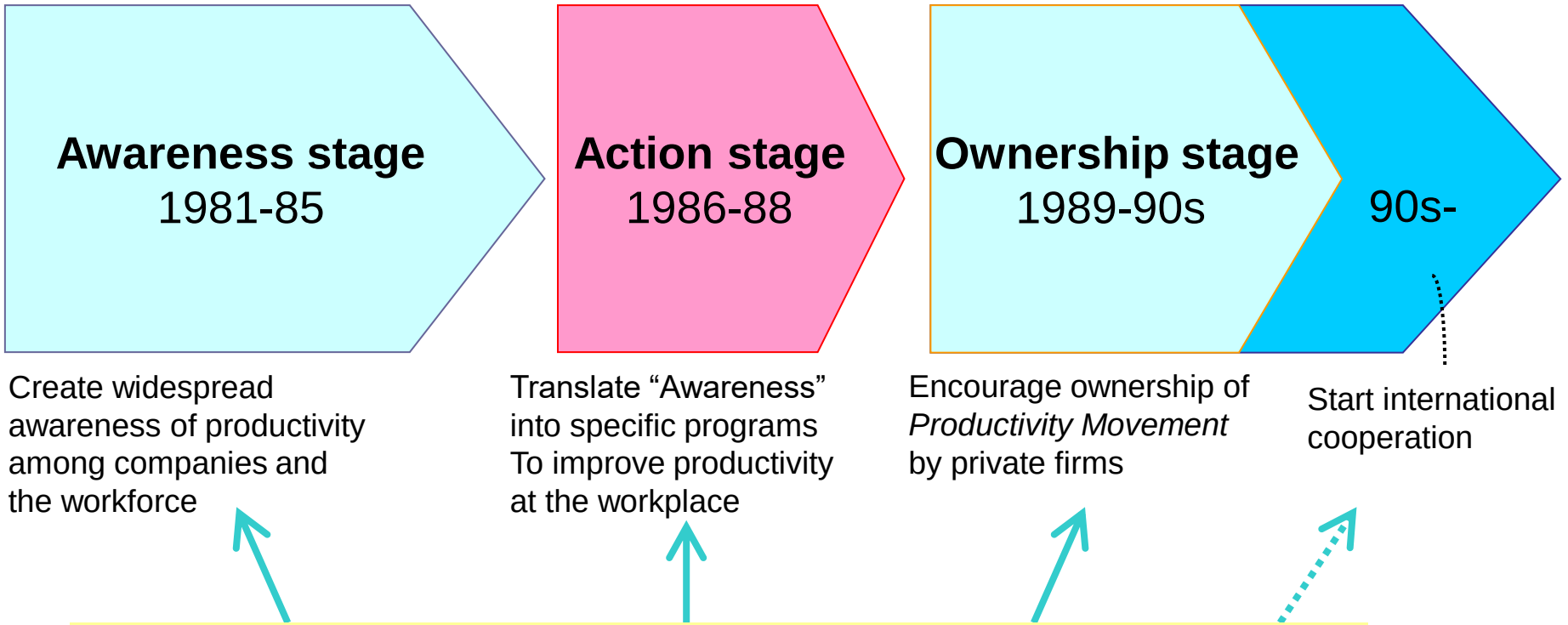
Framework for Productivity Movement

(Around the 1980s)



Source: Information provided by Mr. Lo Hock Meng to the GRIPS mission on Sept. 2, 2010.

Evolution of Productivity Movement in Singapore



JICA-supported Productivity Development Project (PDP: 1983-90)

Training of NPB staff
Massive campaign
➔ NPB staff (with JICA experts) conduct company visits, model company project, etc.
➔ Private management consultants

Key Message: Awareness Raising

Teamy Bees

"Together We Work Better"

- Productivity campaign slogans and posters

- Virtuous cycle (political message)
  Increased productivity
  - ➔ Growth of business/economy
  - ➔ More consumer demand for products
  - ➔ Welfare improvement of individuals

Core Organization: National Productivity Board (NPB) 1981-95

- NPB: Statutory body, initially affiliated with Ministry of Labor; later with Ministry of Trade and Industry (MTI)
- Serving as the secretariat of National Productivity Council (NPC)
- Training and developing a cadre of management consultants
- Promoting Work Excellence Committee and Quality Control (QC) Circles
- Promoting productivity campaign
- Administering the Skills Development Fund (incentives for companies to train workforce)

Cf. **Skill Development Fund**: Established in 1978, as an employer-based funding that provides financial incentives for staff training. All employers must pay Skills Development Levy for all workers.

Core Organization: Singapore Productivity Association (SPA)

- Established in 1973 as an affiliated body of NPB (now, ESG)
- Promote the active involvement of organizations and individuals in *Productivity Movement* and expedite the spread of productivity and its techniques
- Organize courses and seminars, company visits, study tours to promote knowledge/skills acquisition
- Members (institutional or individual) have access to information, training and seminars, networking opportunities, etc.
- International cooperation: in collaboration with MFA, MTI, ESG, APO, AOTS, etc.

http://www.spa.org.sg/index.php

Experiences from Other Countries

- **Ethiopia**—govt.-led, national Kaizen movement, with JICA assistance.
- **India**—private sector-led, kaizen introduced by a Japanese car maker; also promoted by local business associations.
- **Mauritius**—govt.-initiated; strong momentum created, but slowing down in recent years…
- **Botswana**—govt.-initiated, with Singaporean assistance; strong awareness raising, but limited action on the ground…
- **Burkina Faso**—govt.-initiated, recommended by WB (Japanese TM); strong interest generated, but limited sustainability after WB completed…

Ethiopia: Govt.-led Initiative, Developing into *Kaizen* National Movement (Recently Started)

- In 2008, late Prime Minister Meles requested JICA for Kaizen assistance.
- He even ordered selected local firms to try Kaizen by self-learning, before JICA started assistance.
- **JICA's Kaizen assistance to Ethiopia**
  - Phase 1 (2009-11)—30 pilot firms improved; Ethiopia Kaizen Unit established within MOI
  - Phase 2 (2011-14)—Kaizen Unit was upgraded into Ethiopia Kaizen Institute (EKI); 249 firms coached, a total of 409 kaizen consultants trained; Kaizen National Movement launched
  - Phase 3 (2015-20)—advanced kaizen, teaching other countries
  - Phase 4 (2021-)—building more comprehensive firm support system (combined with BDS)
- In Sept. 2014, the National Kaizen Council established, chaired by PM (with multi-stakeholders); September was designated as Kaizen Month.

Evolution of Core Organization

Period	Organization	Remarks
2009	Kaizen Unit established within the Ministry of Trade and Industry (MoTI).	· Eight staff of KU trained as Kaizen cosultants (under JICA project phase 1).
2011	Ethiopian Kaizen Institute (EKI) affiliated with the Ministry of Industry (MoI).	· EKI established with 11 staff. · 2014: Natinoal Kaizen Movement launched
2015	EKI placed under the Ministry of Public Service and Human Resource Development (headed by DPM). In 2022, EKI's name was changed to Kaizen Center of Excellence /Quality and Productivity Improvement Center, placed under MOI's Manufacturing Industry Development Institute.	· EKI staff increased to more than 100; 35% budget increase (2016). · Expanding supporting network: (i) priority manufacturing sectors, (ii) regional outreach, (iii) public sector & corporations, (iv) research & certificaton authority, (v) service sector.

- The Five-Year Plan (GTP II: 2015/16-19/20) emphasizes the *kaizen* philosophy.
- In 2016, EKI started working with 4 cities (Mayors) for pilot *kaizen* projects (in 2017, 2 cities added) aimed at societal transformation involving kindergarten, TVET, universities, etc.

Kaizen in Ethiopia

Driven by strong initiative of PM with JICA's support

Tire factory

PVC pipe factory

Shoe factory

India: Private Sector-Driven Kaizen Initiative?

- India's kaizen started when Maruti-Suzuki, a Japanese car JV, taught *muda* elimination to local component suppliers in 1984.
  - All 380 first-tier suppliers of MS learned kaizen, through the Maruti Center for Excellence (MACE), AOTS, vendor training program, etc.
- Other car makers and the Automotive Component Manufacturers Associations also promoted kaizen.
- Confederation of Indian Industry (CII) promoted kaizen to non-automotive sectors.
- Indian engineers can now perform kaizen perfectly without Japanese. Kaizen is firmly established in Indian auto & textile sectors.
- But, kaizen remains largely private sector activity — with limited role of govt.?

Kaizen in India

Indian auto part company practicing kaizen near Delhi; Indian engineers learned kaizen from Maruti-Suzuki, a Japanese JV.

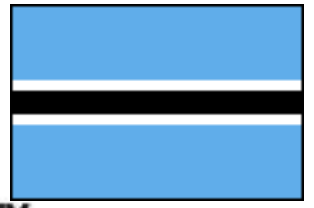
Mauritius: Govt.-led Initiative

NPCC
Ensam pou enn méyer kalité lavi
NATIONAL PRODUCTIVITY AND COMPETITIVENESS COUNCIL
Republic of Mauritius

- Mauritius is one of the first African countries that adopted kaizen practice (in textile firms by UNIDO experts in the 80s).
- In 1999, govt. established the National Productivity and Competitiveness Council (NPCC) to advance productivity movement.
- NPCC launched nation-wide campaign during 2003-06 ("Make Mauritius Muda Free"). It benefitted from support from JPC and APO experts during 2006-10. 80 firms were trained (as of Oct. 2012).
- However, kaizen fever is diminishing, as political support has weakened. Now, NPCC is reduced in size.
  - NPCC has suffered from frequent changes in supervising ministries (MoPED ➔Min. of Training ➔Min. of Edu. ➔MoFED).

Botswana: Govt.-led Initiative

(based on the paper by Prof. Daniel Kitaw, 2011)



BOTSWANA NATIONAL PRODUCTIVITY CENTRE

- In 1991, Govt. started Productivity Movement and received Singaporean assistance (until early 2000s).
- In 1993, President Sir Ketumile Masire announced the establishment of the Botswana National Productivity Center (BNPC) as a parastatal, reporting to Minister for Presidential Affairs and Public Administration.
  - Tripartite Board comprising of representatives from govt., employers, and workers' organizations.
  - Work for both public service and enterprise support programs
- Major efforts on awareness raising: Tripartite and community-based structure and networks; "Productivity Week," etc.
- However, limited progress in translating "awareness" into practical action for productivity improvement on the ground.

Burkina Faso: Govt. with Donor

(Based on the paper by Sayoko Uesu, 2011)

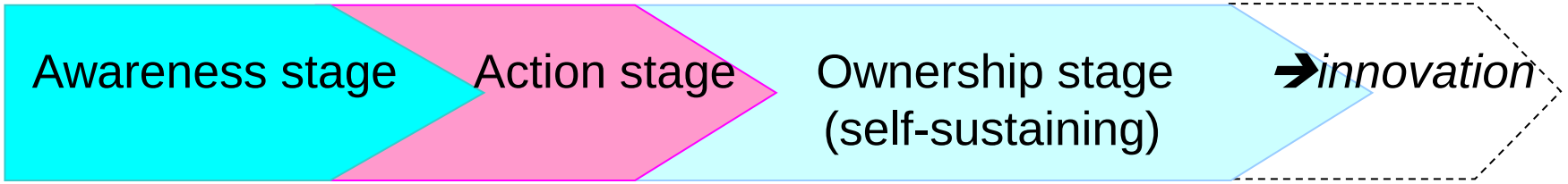
- In 1989, Govt. introduced QC Circles on a pilot basis, at the recommendation of World Bank (Japanese TM)
  - To complement the Structural Adjustment Program (1991-), by enhancing supply-side capacity
- During 1989-2000, JUSE experts were mobilized for pilot implementation of QC Circles (WB-supported TA). Selected companies (private & public) implemented QCC, generating strong interest among policymakers and businesses.
- Core organization: a unit of the Ministry of Export Promotion ➔later transferred to a NPO (ABCERQ).
- However, the extent of diffusion of QCC remained limited. Major challenges were:
  - Sustaining the core organization and building a comprehensive system for quality & productivity management
  - Training the second generation of experts, after WB project

Implications and Lessons Learned

- Drivers of the Q&P Movement differ by country.
  - Domestically-driven (e.g., export drive) vs. externally-driven (e.g., FDI demand for finding good local partners)
- Degree of private dynamism affect the nature of core organizations
  - Private sector capability in initiating, scaling-up, and sustaining the movement
  - Absorptive capacity of new technologies, incl. educational and training levels of general workforce
- Political drive is absolutely necessary to create **social compact** among industry, workforce, academia, and the citizens at large.
- At the same time, economic incentives are crucial to sustain the Q&P Movement.

Critical Role of Core Organizations

- National Movement requires long-term efforts; be mindful of three stages.



- Core organizations play a critical role in all stages:
  - Massive campaign for **mindset change**
  - Training programs & materials (with adaptation)
  - Mechanism for nationwide outreach
  - Mechanism for inter-agency coordination
  - Developing private sector capability
- Sustainability of the core organization (technical & financial)

Recent Books on Kaizen

- Promoting Quality and Productivity Improvement/Kaizen in Africa (eds. Jin & Ohno 2022) https://www.jica.go.jp/jica-ri/publication/booksandreports/20220210_02.html
- Applying Kaizen in Africa: A New Avenue for Industrial Development (Otsuka, Jin, Sonobe, 2018) https://link.springer.com/book/10.1007/978-3-319-91400-8
- Workers, Managers, Productivity: Kaizen in Developing Countries (eds. Hosono, Page, Shimada 2020) https://link.springer.com/book/10.1007/978-981-15-0364-1
- Kaizen National Movement: A Study of Quality and Productivity Improvement in Asia and Africa (eds. GDF & JICA 2011) https://www.grips.ac.jp/forum-e/pdf_e12/JICA&GDFReport_Ethiopia_phase1/Kaizen_National_Movement/Kaizen_e.htm