"Mathematical Optimization promotes communication"

Practitioner Entities: Japan Railway Station, Chain Store, Call Center, Production Center, Air Conditioning

Due Dates
Resources

Information Technology (IT) System Integrator

While (!Satisfy(output)) {

Collect data;

Build model;

Solve;

Examine result;

If (budget?) Exit;

}

Managerial Personnel: Save Cost! Go Digital!

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Usbong™

# SONY: HARDWARE EXPANSION VIA SOFTWARE PROFIT

## PLAYSTATION PRICE HISTORY

**@1USD:54PHP**

1. SCPH-1000 (1994-12): **399USD**; **21,546PHP**
2. SCPH-3000 (1995-07): **299USD**; **16,146PHP**
3. SCPH-3500 (1996-03): **249USD**; **13,446PHP**
4. SCPH-5000 (1996-07): **199USD**; **10,746PHP**
5. SCPH-7000 (1997-11): **180USD**;   **9,720PHP**

1997: 3~4.99Million consoles sold

**Problem: Warehouse (Japan) 500K~600K excess stock due to sales forecast overly optimistic**

**Solution: Establish overseas markets, e.g. UK, Germany, Italy, Spain, Switzerland, and Austria**

1998: >10Million consoles sold

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# SOFTWARE EXPANSION VIA REPEAT PRODUCTION

**Solution: No need to make perfect demand forecasts; Make copies if title sells**

PlayStation software retail price: **58USD (3,132PHP)**, i.e. ½ that of Super Family Computer (Famicom)

"Greatest Hits" price: **28USD (1,512PHP)** each

1993-10~1994-09: Super Famicom software retail price: >**100USD (5,400PHP)**

—> Sold quickly by kids to used-software dealer for **50USD**

—> Dealer: Resells **70USD (3,780PHP)**; **50USD + 20USD**

**SONY** verified using simulations: software producers and retailers still make profit at the reduced price and royalty

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# Practical Application: Philippine Context

**PlayStation Sales Results: 1.78** price elasticity where value **<1** = necessity, i.e. people buy with less and less regard for price
Example (at present): insulin medicine

Ayusin via Maparaang Pagbibilang ang sistema sa Pinas upang may **1.78** price elasticity ang PlayStation sa "general public"

**Halimbawa:**

2020: Filipino family bumibili ng PlayStation 4 console + Minecraft Dungeons **@PHP10K**

**Previously:**

2007: Nintendo DS Lite + New Super Mario Bros. **@PHP10K**

1996: PlayStation + Street Fighter Zero **@PHP10K**

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# References

1) Tanabe, T. (2019). 'Optimization'. Japan: NTT Data Mathematical Systems Inc. https://www.msi.co.jp/english/optimization.pdf;

last accessed: 20201113;

2) Asakura, R. (2000). "Revolutionaries at Sony". USA: The McGraw-Hill Companies, Inc.

3) Hayes, A., et al. (2020). Business Essentials: Elasticity. https://www.investopedia.com/terms/e/

elasticity.asp; last accessed: 20201113

4) Khan Academy. (2020). "Microeconomics Unit: Elasticity". https://www.khanacademy.org/economics-finance-domain/microeconomics/elasticity-tutorial; last accessed: 20201113