

“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

Managerial Personnel:
Save Cost! Go Digital!

```
While (!Satisfy(output)) {  
    Collect data;  
    Build model;  
    Solve;  
    Examine result;  
    If (budget?) Exit;  
}
```



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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: Compact Disc; No need to make perfect demand forecasts; Make copies if title sells @1USD:54PHP

PlayStation software retail price: **58USD (3,132PHP)**,
i.e. $\frac{1}{2}$ 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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