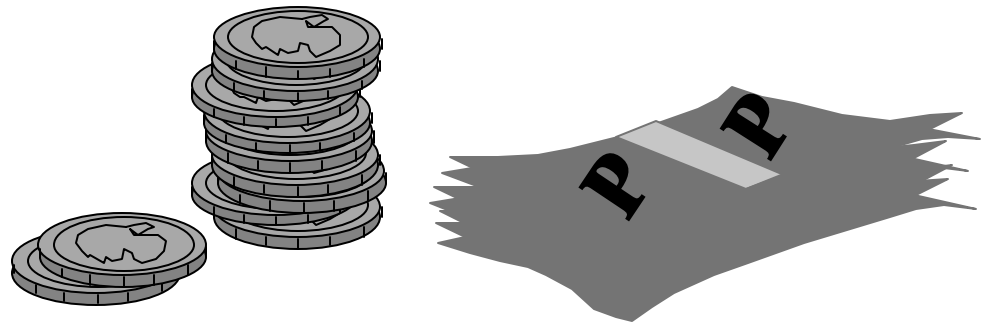




EMA Eyeopener:

Environmental Management Accounting (EMA): An Environmental Management Tool for Business



About PICPA

- The Philippine Institute of Certified Public Accountants (PICPA) is the national organization of accountants in the Philippines
- PICPA is a founding member of the ASEAN Federation of Accountants; it is also an active member of various regional and international accounting organizations
- PICPA is responsible for the continuing professional education of Filipino accountants in the following sectors: commerce and industry, public practice, education, and government

About EMAN-AP

- Network of individuals and organizations working towards the development and promotion of Environmental Management Accounting (EMA) as an important sustainable development tool
- The mission of EMAN-AP is to provide a link among developers, providers, and users of EMA in order to assist businesses, governments, and other organizations to make informed decisions through the use of the EMA tool
- EMAN-AP Secretariat is located at the I GES-Kansai Research Center in Kobe, Japan

What is EMA?

Environmental Management Accounting (EMA) is the

- identification, collection, estimation, analysis, internal reporting, and use of...
- materials and energy flow information, **environmental cost information**, and other cost information...
- for both conventional and environmental decision-making within an organization.

Why was EMA Developed?

EMA was conceived in recognition of some of the limitations of conventional practices for informing environmental management decisions

- "hiding" of costs in overhead accounts
- inaccurate allocation of overhead costs back to processes, products, activities
- insufficient tracking of wasted materials and energy
- lack of data on future and less tangible costs in the accounting records at all

EMA measures
Environmental Costs
(The Cost of Waste)

The Cost of Waste

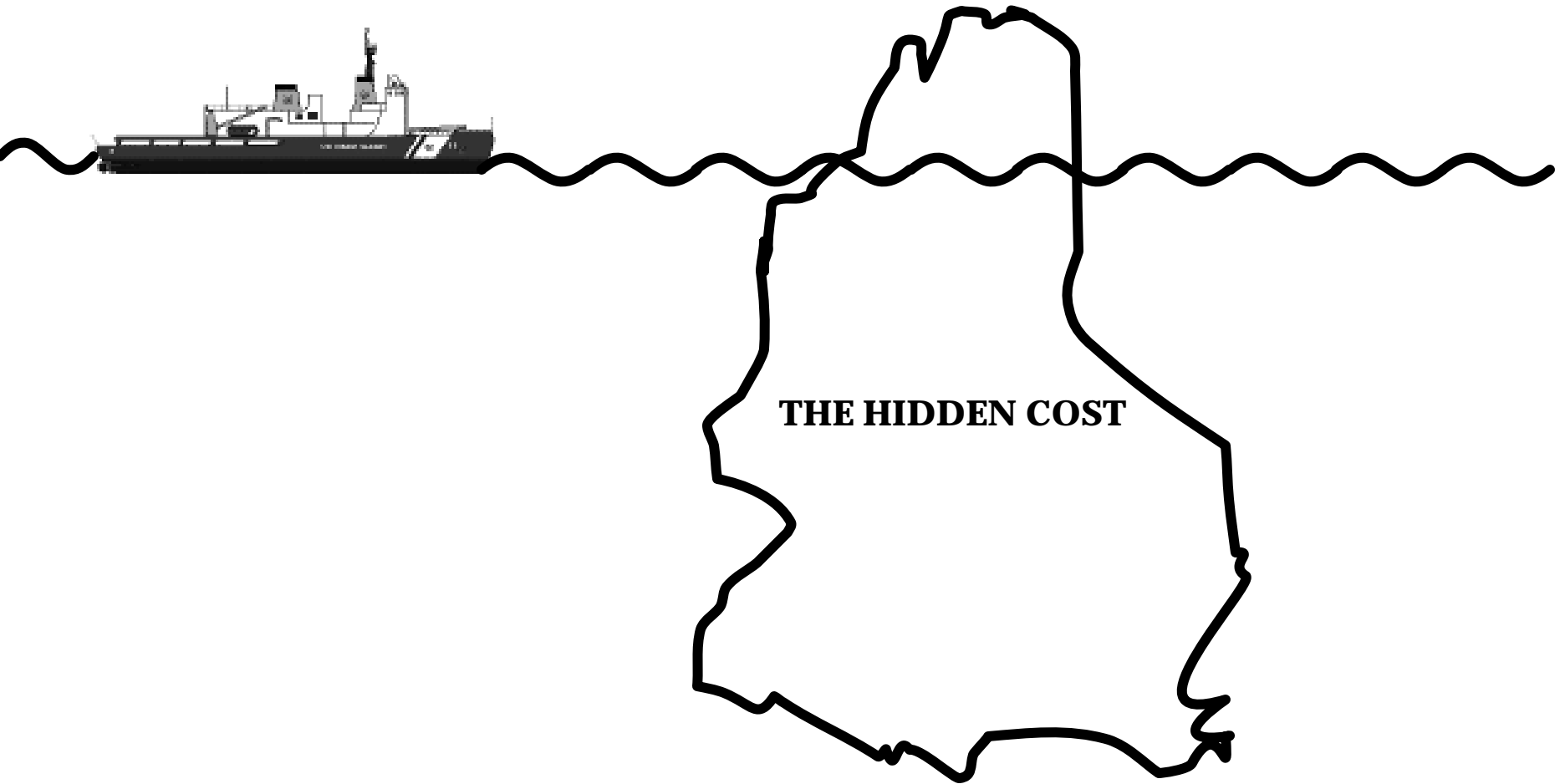
- The cost of waste is higher than most business managers assume
- The cost of waste goes beyond disposal costs
- Improved cost of waste information can be a powerful driver for implementing P2/CP in companies

Environmental Costs Are Often Underestimated

- Research Findings:
 - For every dollar of waste cost that companies actually measure, **another 2 to 3 dollars of cost** are "hidden" in the accounting records, or are not on the books at all
 - Companies typically underestimate how much waste really costs them, sometimes by several orders of magnitude
 - This applies even to big, well-managed companies

The Cost Iceberg

Environmental costs can be like an iceberg, with only a small part of the cost visible



Adapted from: Bierma, TJ., F.L. Waterstaraat, and J. Ostrosky. 1998. "Chapter 13: Shared Savings and Environmental Management Accounting," from *The Green Bottom Line*. Greenleaf Publishing:England.

The Cost of Waste at the PLS Company

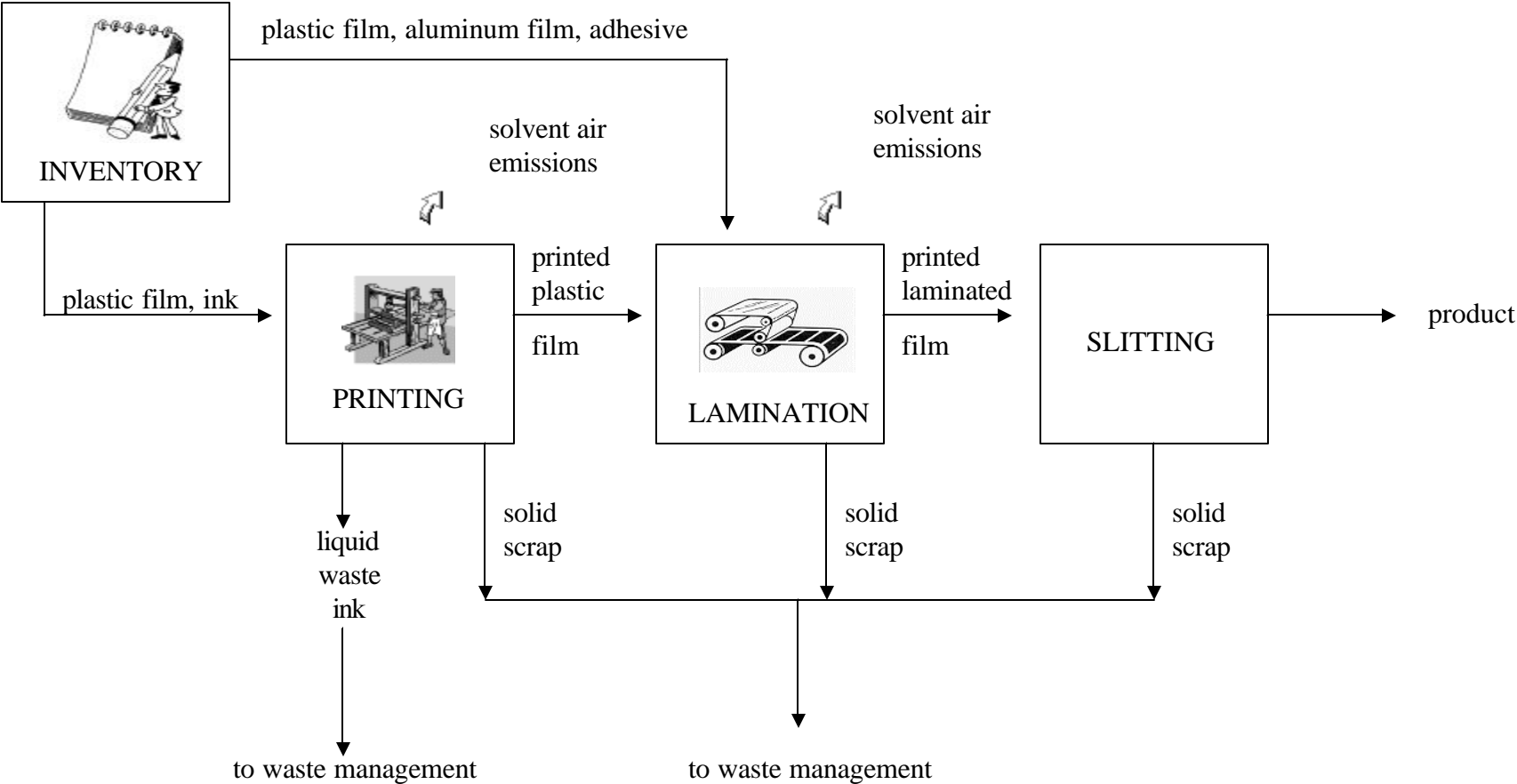
Small Group Exercise

Case Study: The PLS Company

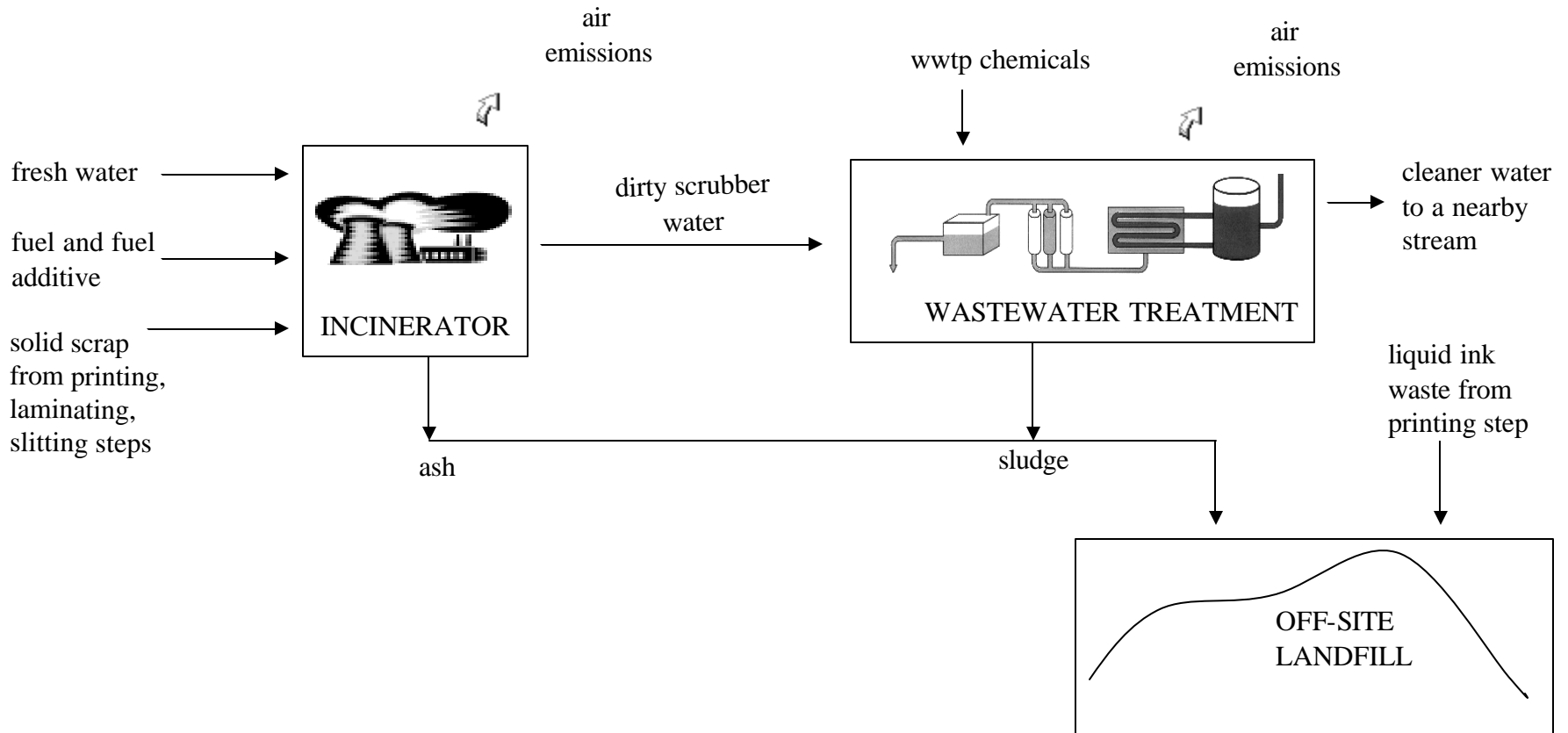
- A mid-sized manufacturer of food packaging materials
- Major manufacturing steps are Printing, Laminating, and Slitting
- Waste management includes incineration and wastewater treatment

Manufacturing Steps at the PLS Company

Materials Flow Map



Waste Management at the PLS Company Materials Flow Map



Exercise Instructions

- Break into small groups
- Briefly review the written description and materials flow maps of PLS' operations
- Question - Brainstorm about the "Cost of Waste" for solid scrap from the printing step
- Discuss your answers with the other small groups and the instructor

Reducing Waste and its Costs at PLS

Cleaner Production at the PLS Company

- PLS implemented two CP projects to reduce the cost of waste in the printing step
 - an on-site scrap recycling project to reduce waste from start-up runs
 - a quality control camera project to reduce waste from errors during full-job runs

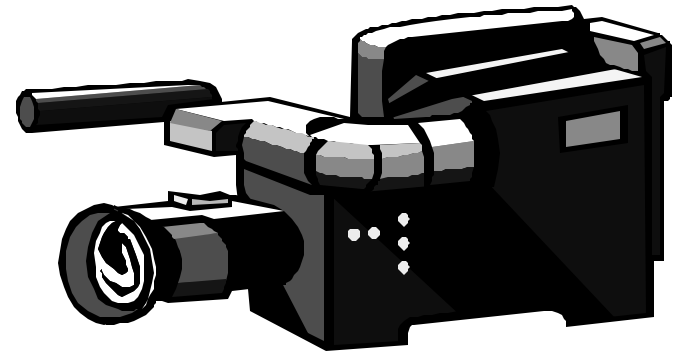
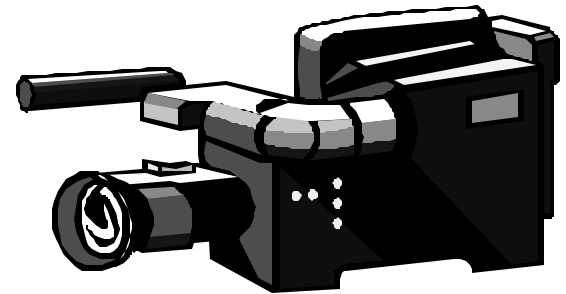
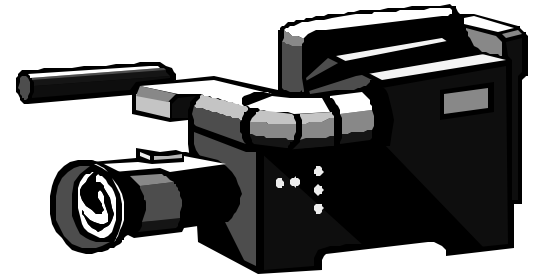
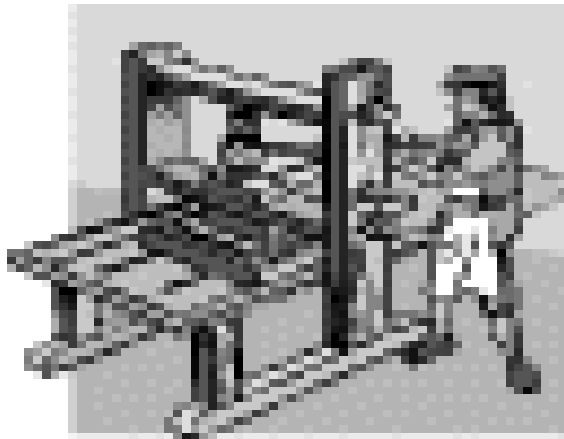
The PLS Company's Scrap Recycling Project

- PLS decided to start using solid scrap material for print job start-up runs, rather than using new plastic film
- This would reduce the use of raw materials and the rate of solid scrap generation
- Since this project did not require any cash outlay, PLS was able to implement it right away

The PLS Company's Quality Control (QC) Camera Project

- PLS decided to purchase and install a 3 - camera system to monitor quality control of the print jobs as they actually occur
- Allows the operators to detect print errors earlier and halt the operations before too much solid scrap is generated

3 Camera System Project



Camera Project Cost Savings

Cost Item	Before Project	After Project	Savings
Manufacturing Inputs	\$2,913,792	\$2,883,105	\$30,687
Treatment Costs	18, 878	11,316	7,562
Disposal Costs	534	320	214
Costs and Savings	\$2,933,204	\$2,894,741	\$38,463

Additional Savings in Future Upgrade Cost

Estimated Wastewater Treatment Plant Upgrade Cost in Year 3	\$150,000
Revised Wastewater Treatment Upgrade Cost in Year 3 *	\$95,000
Savings in Future Upgrade Cost	\$55,000

*Lower upgrade cost was attributed to the reduction in required wastewater treatment capacity due to less generation of wastewater

Camera Project Cost/Savings Profitability Indicators

Capital Investment Cost	\$105,000
Annual Savings	\$ 38,463
Savings in Wastewater Treatment Upgrade – Year 3	\$ 55,000
Payback Period	2.7 years
Net Present Value	+18,981

QC Camera Project Qualitative Assessment (Less Tangible Issues)

- Increased productivity
- Proactive environmental management and enhanced compliance capability
- Relief from potential liabilities
- Employee health and safety
- Improved community relations

Final Words

- The cost of waste has many components and can be much higher than most managers assume
- Financial information will always be an important factor for driving and implementing many environmental management strategies in business
- Environmental Management Accounting (EMA) overcomes the limitations of conventional cost accounting practices and can serve as an important tool to help business identify process inefficiencies and opportunities for management and technology changes.



Thank You
Maraming Salamat!

