# Cumbie's IS Model

**Information Systems.** Your textbook tells you there are four major components: data, databases (the heart of an IS), processes, & information. It also casually mentions hardware, software, and human elements.

While I do not disagree with this perspective, I do not think it somewhat vague and can be complemented with another viewpoint:

**InfoSys = PPL + PROC + TECH ---> GOAL**

Let me break that down. Information Systems (IS or InfoSys) are people, processes & procedures (PROC), using information and communication technologies towards an express purpose or goal.

**GOAL.** Starting with the goal and working backward, the GOAL of Information Systems vary widely but, in our business context, are ultimately driven by the value they create in supporting organizational success. Simply but: IS should enable, support, or even create the value for our organization. One important lesson we try to avoid in business is to avoid **TECHNOLOGY FOR THE SAKE OF TECHNOLOGY**. We do not want to be constantly running after new technologies just because they are cool or fast, but want to have a solid business case for our the technologies we adopt. Finally, Information Systems are considered **NECESSARY BUT NOT SUFFICIENT** in pursuit of a sustainable competitive advantage. Put another way, just having a website, for example, doesn't guarantee you will be successful but not having one will guarantee failure.

**TECH.** We throw this term about so much it is hard to really nail down its meaning. Technology can be anything from an idea (the discover of Zero, double-entry bookkeeping, Capitalism) or tools (a hammer, microchip, or moon lander). We can narrow our context down to speak only of Information & Communication Technologies (ICTs) or just call it IT. Even this is a broad category with so much variety and nuance. As simply and I can put it:

**IT = HW | SW | NW | DB**

(Hardware, Software, Network, Database)

IT is digital. Digital is 0s and 1s (binary) at its core. Think of IT as 0s and 1s that are created with hardware (typing on a keyboard), processed with software (translating the keyboard stroke to a letter on the screen), transmitting the 0s and 1s (whether inside a device or across a network or the Internet), and stored in a database. Don’t overlook that these components are all parts of (usually electronic) machines called computers.

This is an oversimplification but a good basis for us to build upon.

**PROC.** This may stand for Processes or Procedures (i.e., Protocols). Processing in its most simple form is I-P-O.

**I-P-O: INPUT -> PROCESSING -> OUTPUT**

The Output minus the Input equals what we consider VALUE.

Adding value is what business do. Business processes like ORDERING SUPPLIES, HIRING AN EMPLOYEE, PROCESSING AN INSURANCE CLAIM, SELLING GOODS, COUNTING INVENTORY, REPORTING EARNINGS, are just some examples of PROCESSES that are tied in some way to digital processing as part of a larger Organizational Information System.

We could extend this model to connect process to other ones (where the OUTPUT of one process equals the INPUT of another process) or with multiple inputs or outputs, or by including a feedback loop; but this is a good start.

I also mentioned PROC could mean Procedures. This includes technical protocols that are the "rules" behind how all of our digital world works. We see a lot of the acronyms everyday but might not think about them. These include anything from HTTP that tells how to move HTML around and render web pages on our browser or SMS to text or VoIP to video or WiFi to connect to a network, etc. They are all around us. Most all of them are part of the "suite" of protocols known as TCP/IP.

Lastly, procedures might also refer to the human-based rules of IS. This could be things we make up like how often to change your password in an organization or UNA's IT Acceptable Use policy that you read in its entirety because it is part of the syllabus, or laws about what we can and can't do online.

**PPL.** The people of Information Systems. Traditionally called “Users”, that designation always makes me think of drug addicts, which might be a good analogy for our addiction to our devices. People can include anyone related to our IS from the end-users, developers, tech support, managers, customers, vendors, regulators, law enforcement, and so forth and so on.

We used to consider users of our IS just our employees and maybe some business partners, but after we had the Internet (and the Web) and websites that could handle customer accounts, e-commerce, and the like, now our IS include potentially everyone with I’net access. Consumer-facing technology - iPhones and the Facebook, for example - have opened up the idea of “users” to almost anybody and anytime.

**INFORMATION.** The textbook splits data and information, which is technically correct; no arguments from me. We typically think of it in a progression from data to information to knowledge where data are raw, information is data that is organized and in context, and knowledge is information that is actionable. Business Intelligence is typically what we are after now: data, information, and BI. This is more-or-less the same thing. What is good information? Remember to eat your CARROTS.

**C**omplete

**A**ccurate

**R**eliable

**R**elevant

**O**bjective

**T**imely

**S**ource

**SYSTEMS.** A system is a group of interrelated parts that comprises a whole unit. I wont say much more than this but in a full lecture about systems I would get into boundaries, assimilation, homeostasis, punctuated equilibrium, and entropy.

So that is an introduction to the dense *STACK* of parts that comprise an IS. In summary:

**InfoSys = PPL + PROC + TECH ---> GOAL**