

NEW TECHNOLOGY BANDWIDTH-ON-DEMAND

In 5 years, 50% of jobs and 70% of work will take place across networks. Connectivity will increase 500-fold over the next 5 years.

WHAT IS NEW TECHNOLOGY?

The engines that power printing and publishing aren't just moving from analog to digital, but more importantly, to networks and interactive technologies. These will continue to get ever faster, more powerful, and cheaper. In 5 years, 50% of all jobs and 70% of all work will take place across networks.

Digital technologies will displace analog processes. Networks and servers will enable not just businesses, but entire industries to leverage these advantages. Interactive services, the building blocks of future businesses, will orchestrate and deliver the value added.

You must realign your technology base to take advantage of this: turbocharge existing workflows, reengineer for high performance and new capabilities, and offer the new products and services that become possible with your networked digital infrastructure.

The coming technical infrastructure is *bandwidth-on-demand*—communication pipes of whatever size needed, whenever and wherever needed. The basic equipment, facilities, and enabling services for printing and publishing will be networked, digital, and engineered for huge gains in performance (as compared with today's workflows).

The building blocks of this new environment will be networked services of all types, administrative as well as content and media processes. Fast networks and servers (computers that manage shared communications, information, and processes) will form the fabric of this infrastructure.

Over the next five years, service levels, speed, cycle time reduction, quality, and costs will improve 5–10 times as businesses drive towards continuous, flexible, streamlined, automated, distributed processes. Those first to master the new technical infrastructure will gain disproportionate competitive advantages as a result.

If all the above seems a little overwhelming, think of it this way: the same re-engineering effort that prepares you for the business of tomorrow makes for a more profitable business today. In fact, if you only continue to service your current markets and clients with your existing products and services, you will still drive costs down and productivity up.



THE CYCLE OF UNDERSTANDING

This infomap charts the evolution of the technical infrastructure. Huge improvements in service, speed, flexibility, cost and quality will occur as companies move to digital systems, network infrastructure, and interactive services.



The focus is on (1) realigning your technology base, (2) turbocharging existing workflows, (3) reengineering for high performance and new capabilities, and (4) transitioning to the new products and service modalities this networked digital infrastructure makes possible.

2. NEW SOURCES OF VALUE

What has value in the new technology environment? What do customers need? As the technology environment evolves, customer needs and expectations will change. Your technical infrastructure must accommodate these changes. These diagrams depict three dimensions of the new technical infrastructure which will generate new value for your customers.

TECHNOLOGY BASE

Figure 1 depicts the transition from analog to digital to networked to interactive technologies that is taking place in the graphic arts. The vertical lines for 1995 and 2000 estimate the approximate position of the industry in this progression.

The way to generate new value for your customers is to "catch the next wave" of technology. You realign your technology base, by shifting from your current position to the next wave of technology innovation. No matter where you are on the technical progression depicted in the diagram, you can improve your position. Here's how:

1. Get digital. If you must maintain some analog processes, move them to the periphery. Make your core functions digital.
2. Get networked. Get your customers networked. Get your suppliers networked. Then use those networks.
3. Build interactive services on top of the network infrastructure. This includes administrative as well as content and media processes.
4. Acquire components of your technical infrastructure much as you currently purchase telecommunications and other outsourced businesses services.

Figure 1

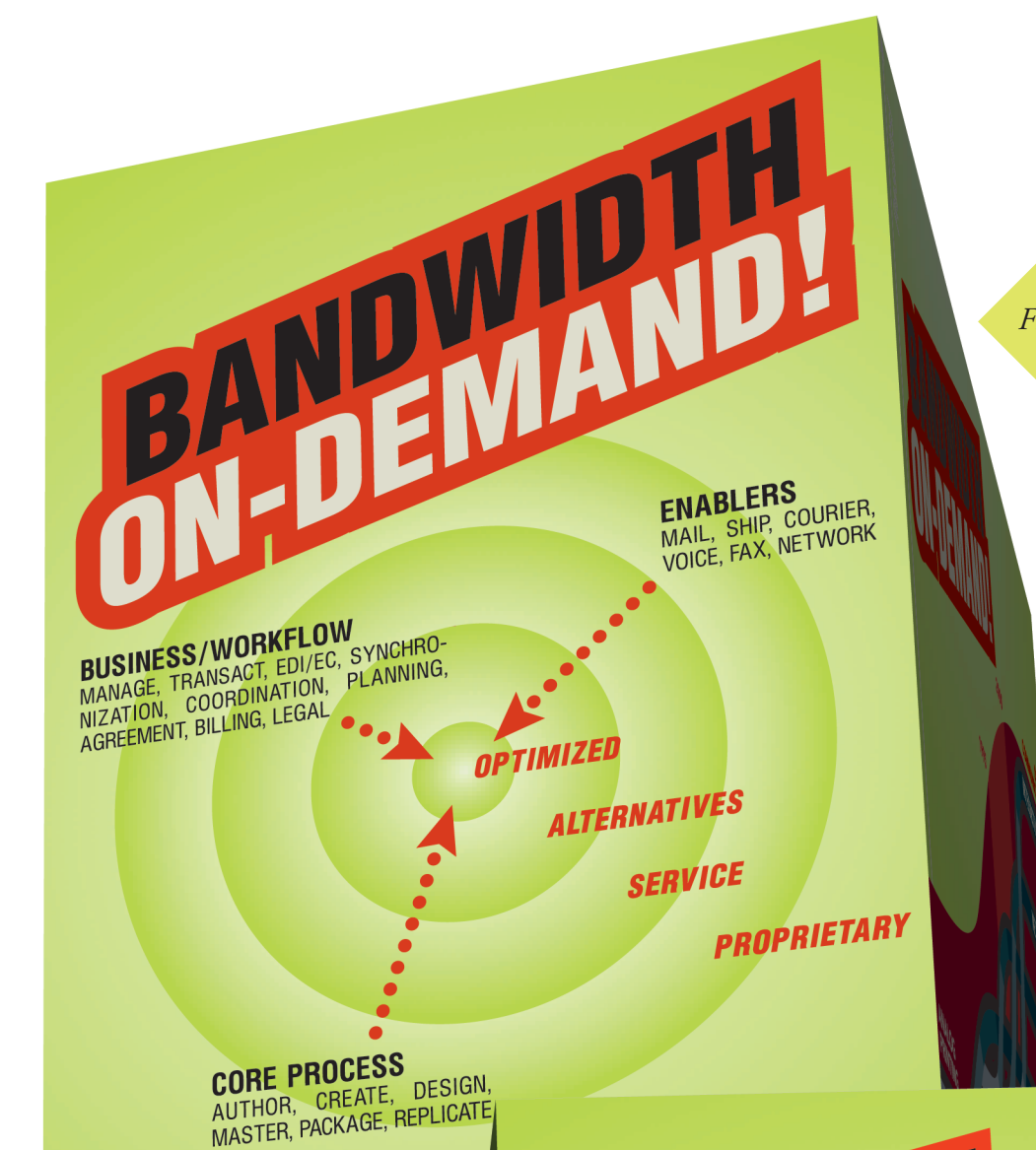
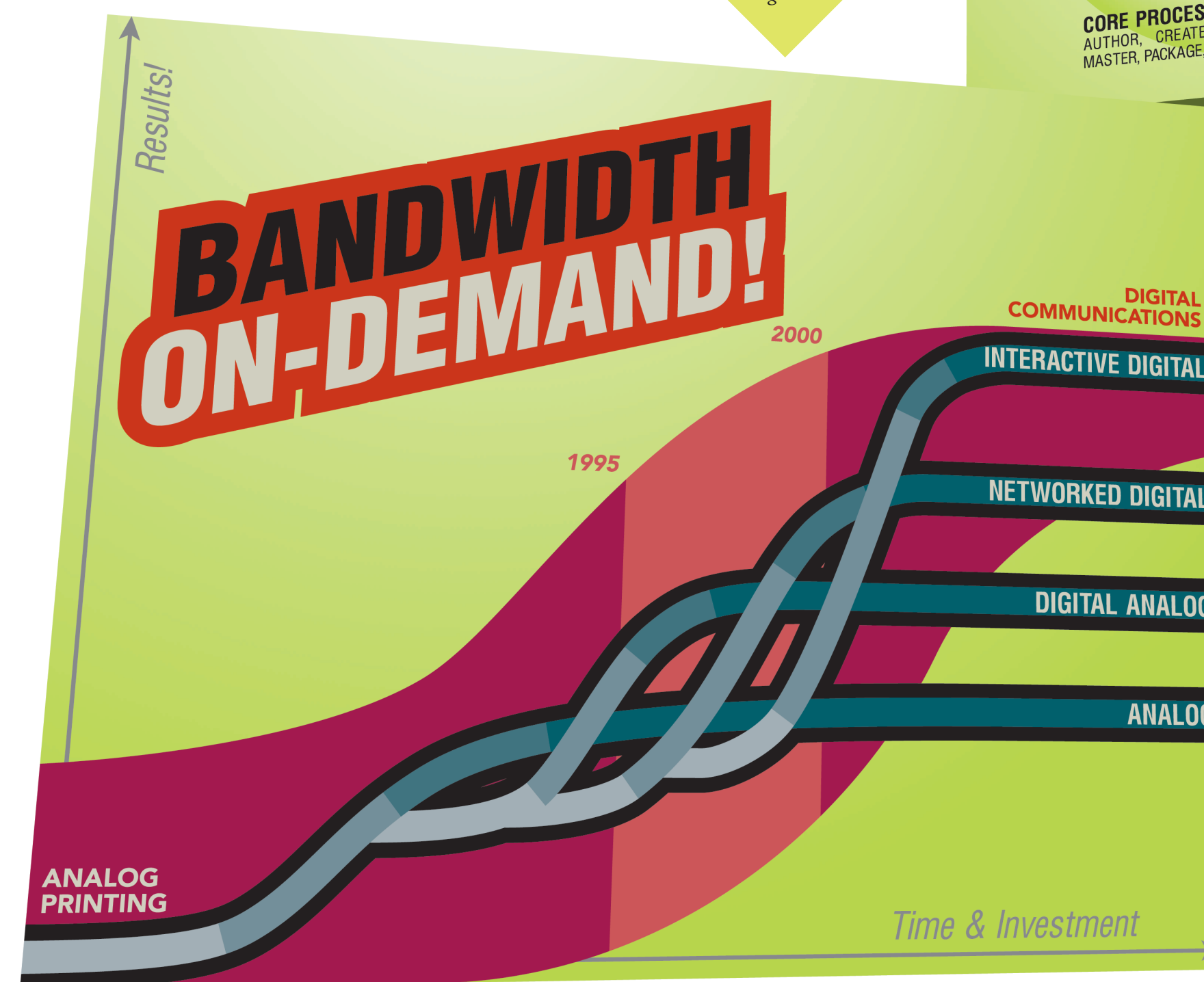


Figure 3

SERVICE MODALITY

The way to add value for customers is to offer services in the right way. As the business of printing and publishing moves to the NET, customers will "channel surf" the print network to find the best value.

All categories of services evolve. Figure 3 depicts the evolution of three categories of networked services, namely: (1) enabling infrastructure services, (2) business services, and (3) content and media services.

The first stage is proprietary technology. Everything is one-off.

The second stage is proprietary service delivered with standard technology components. Proprietary network connections between printers and their customers are an example.

The third stage is standardized services. This provides a choice of alternatives. To select from among several long distance carriers using the same equipment and access procedures is an example.

The fourth stage is adaptive services. Alternative services are managed to deliver greater value. An example is least cost call routing for long distance service.

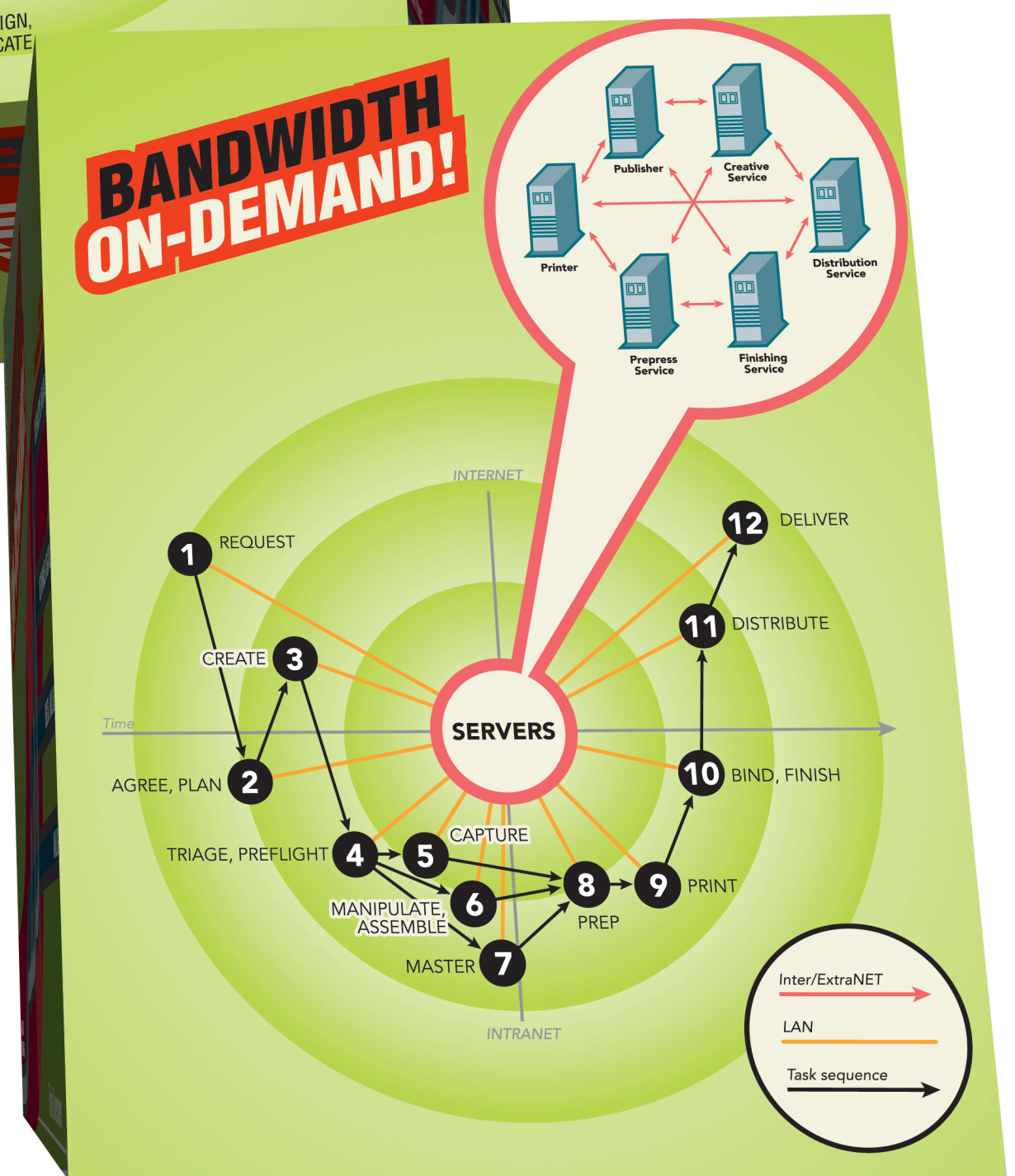


Figure 2

PROCESS ARCHITECTURE

The way to generate new value for customers is through high performance workflow. Process architecture (the arrangement of elements comprising your technical infrastructure), is the key.

As you can see from Figure 2, the new infrastructure you keep hearing about hinges on one thing: the server. Your server will be the hub of your operation, routing, synchronizing, and storing information. Workflow will be less than impossible without one. Imagine your business without a phone or fax machine today, and you have a good idea of what lacking a server will be like in the 21st century. Server-based workflows will be distributive and highly automated.

Distributive workflow

Across networks, communications are multipoint-to-multipoint rather than just point-to-point. Over networks, work can be dispatched and performed where it makes most sense. Throughput can be accelerated by executing tasks concurrently or parallel, rather than just sequentially or linearly. Servers coordinate workflow occurring in multiple places, track status in real time, update schedules and keep everyone informed.

Workflow automation

The fastest workflow is the one that travels the fewest steps and is touched by the fewest people. To reduce cycle time and eliminate latency in workflows, streamline and automate the entire process. Computerizing individual tasks is not enough. It leaves way too much physical handling, waiting, starting and stopping, duplication of effort, and materials (i.e. cost) tied up in the process. Condense the steps. Pipeline tasks. Integrate functions. Drive processes from servers with minimum intervention and data handling.

Eliminate the bureaucracy. Push decision making to the frontline. This may mean creating businesses-within-the-business or cross-functional teams—a small group of people with all the skills and authority to respond rapidly to customer needs and deliver them a complete service.

Manage information. Adding value to digital information plays a crucial role in high performance workflow. The shift is from warehousing files to serving and managing processes using databases.