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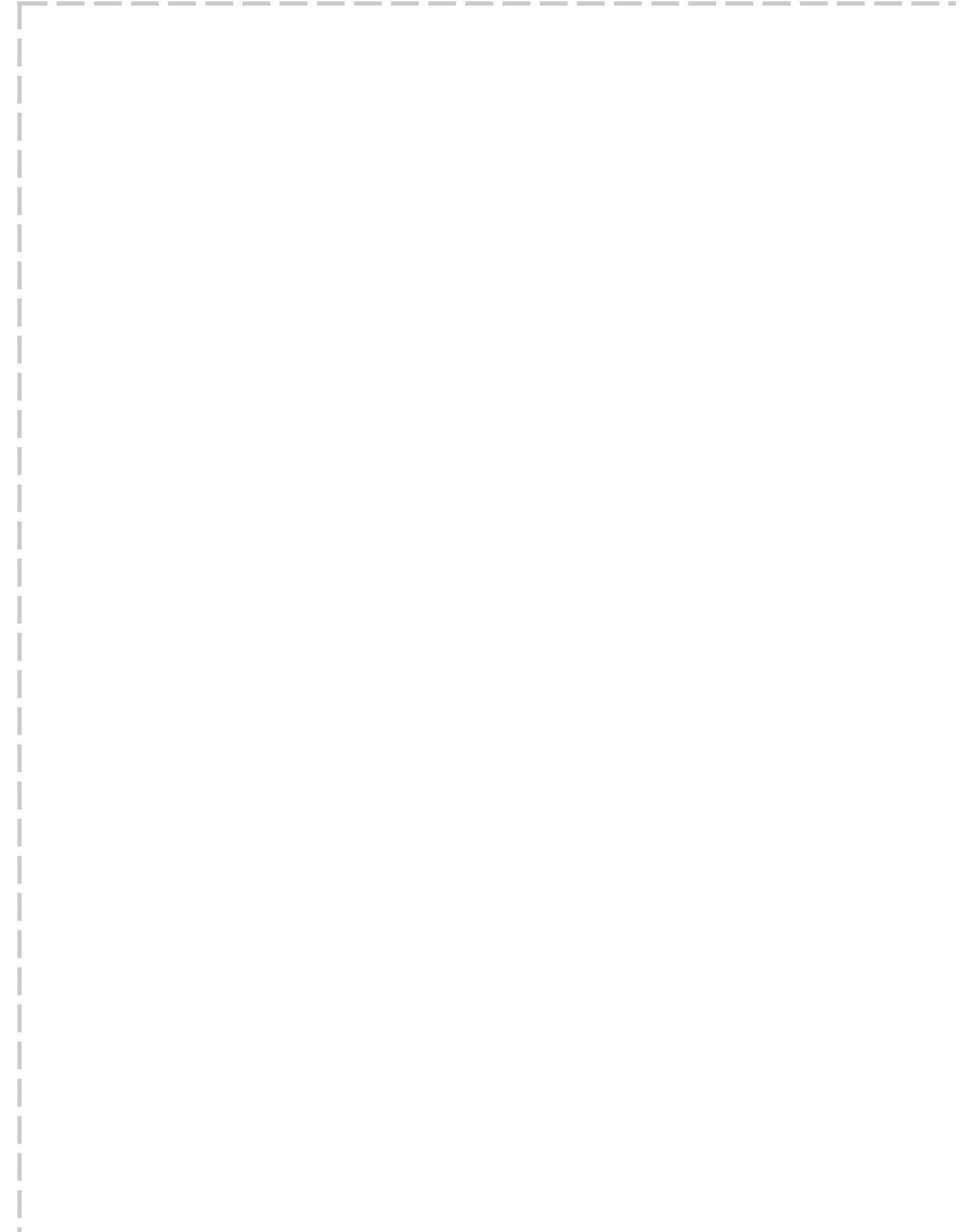
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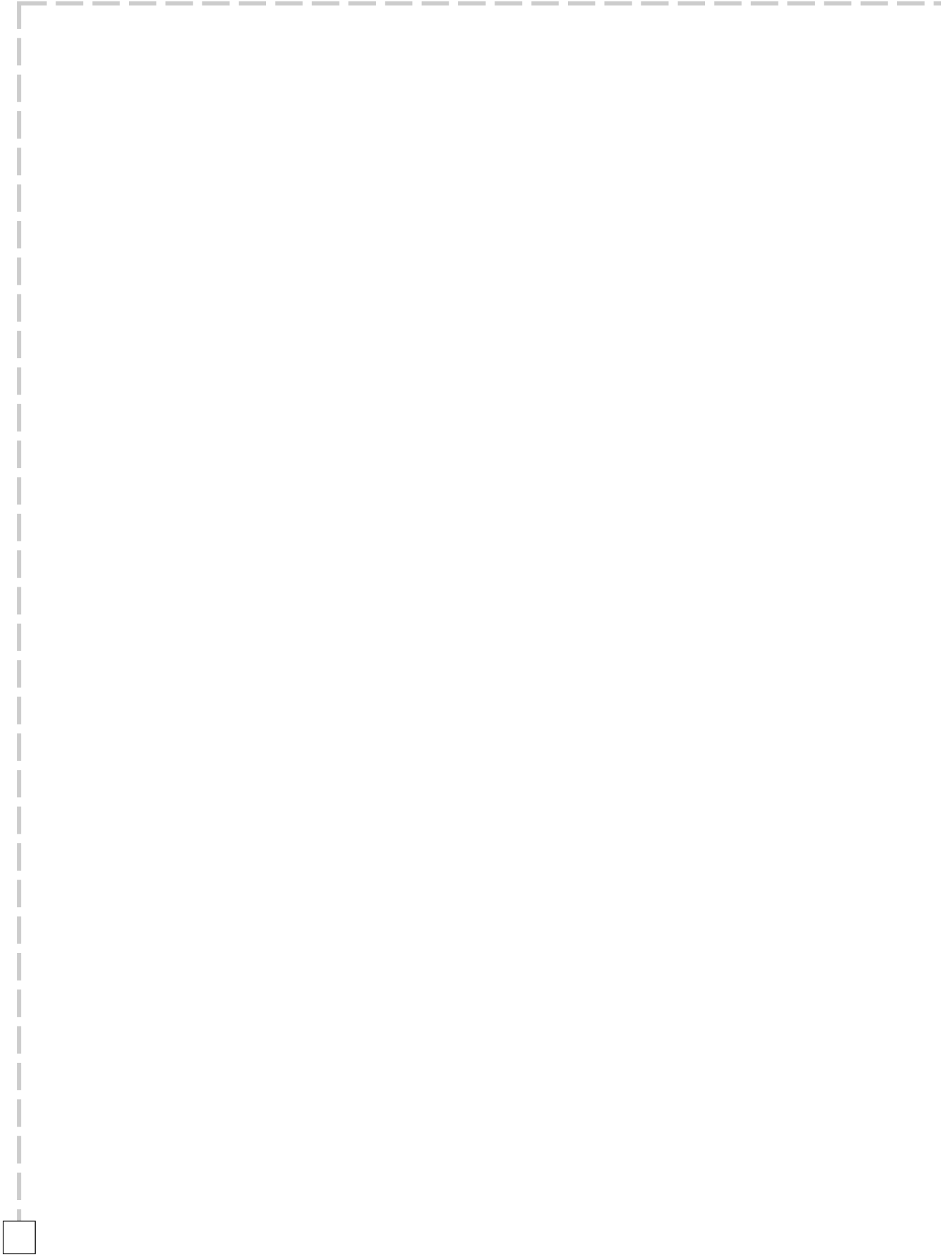
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Home building is an important part of the national economy. Today's U.S. home building industry represents about four percent of the nation'



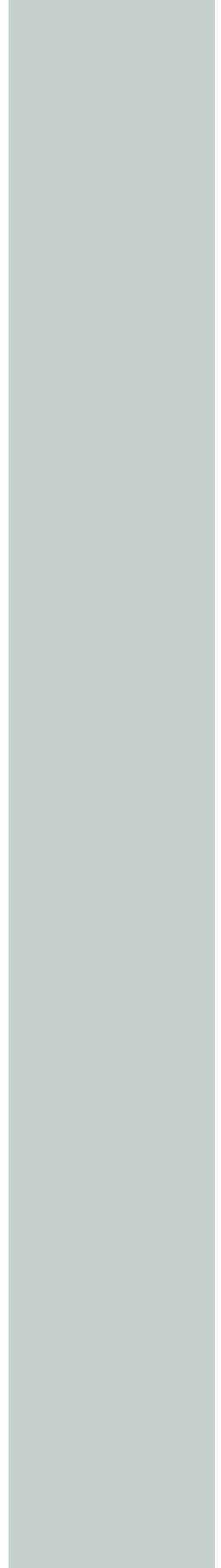
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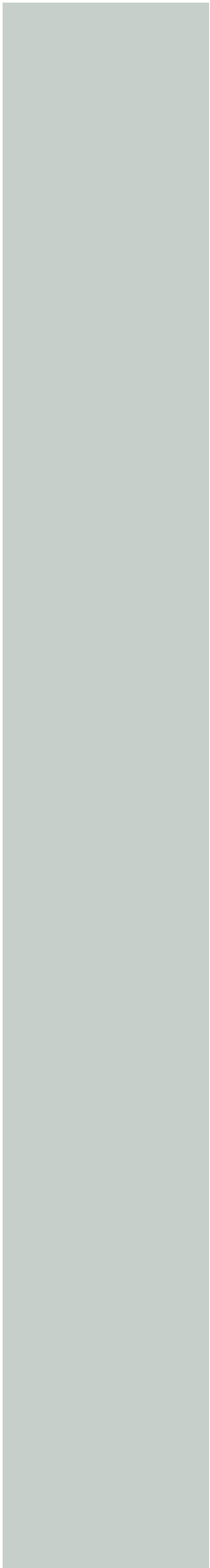
payments overwhelmingly follow paper-based methods. Many builder software systems can integrate purchase orders with other project

The challenges and barriers for broad infusion of IT into the home building industry are

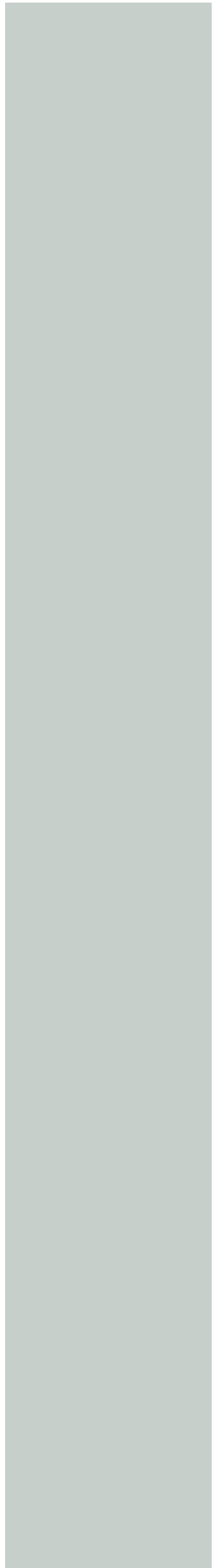
## OVERVIEW

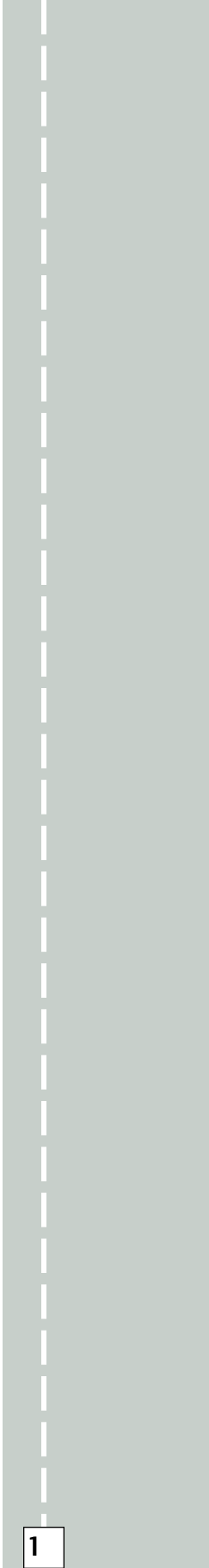
Below are four strategies to advance the *Information Technology Roadmap*

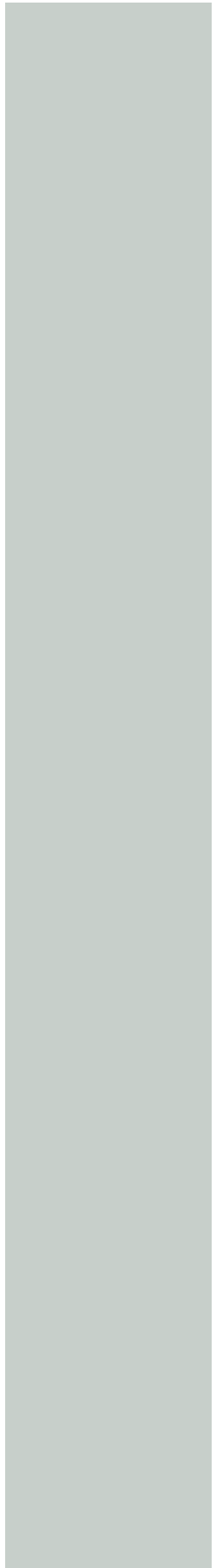


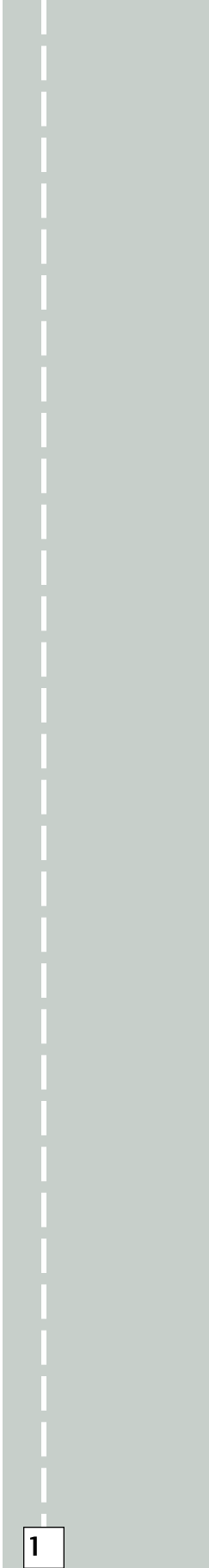


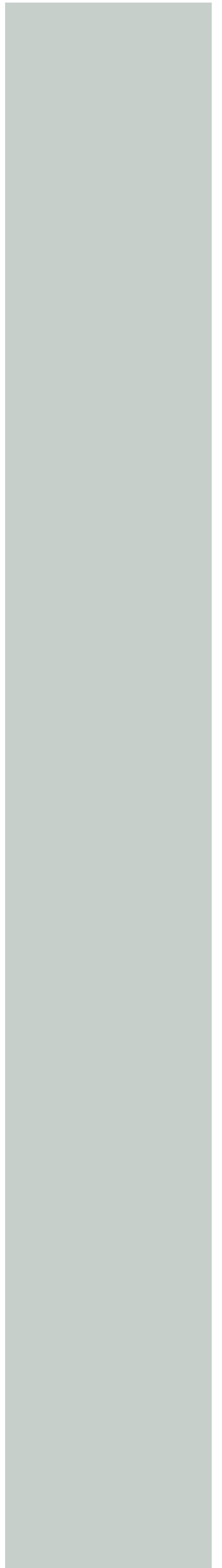


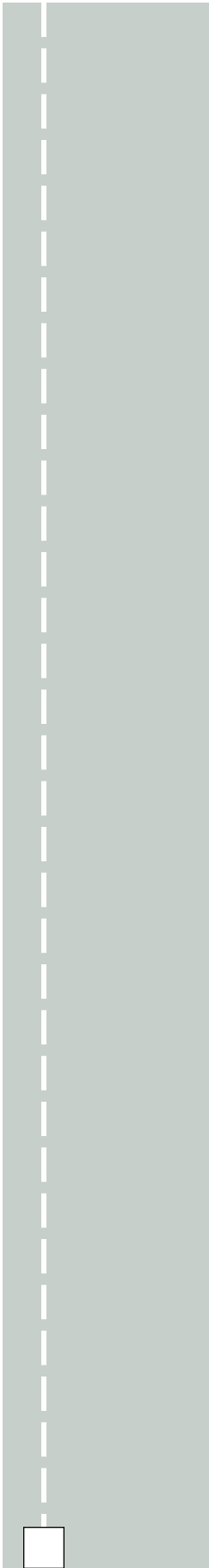


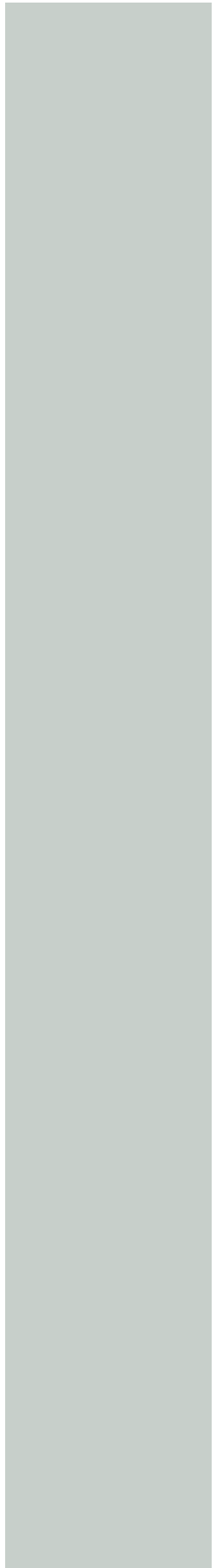


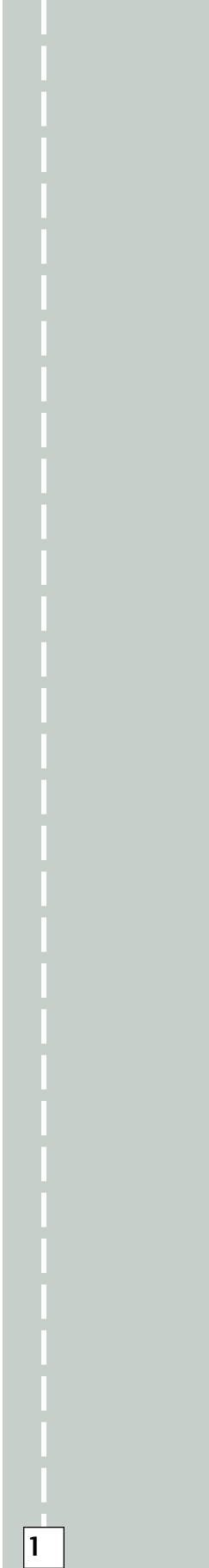




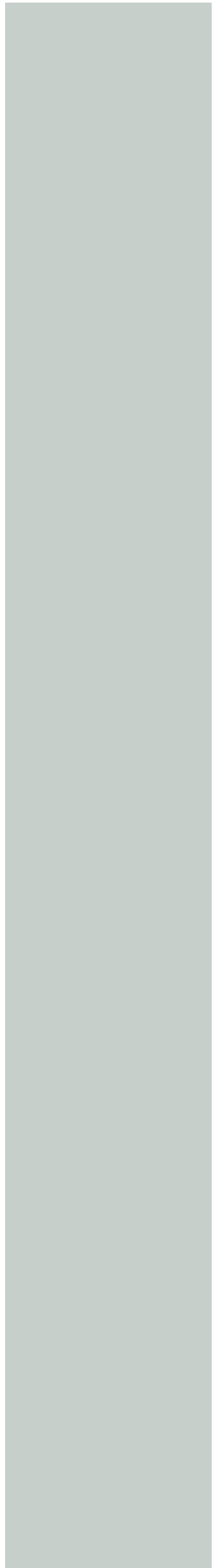


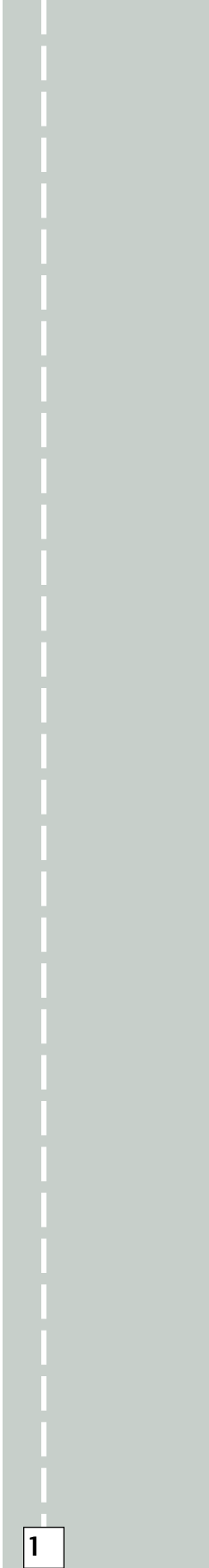


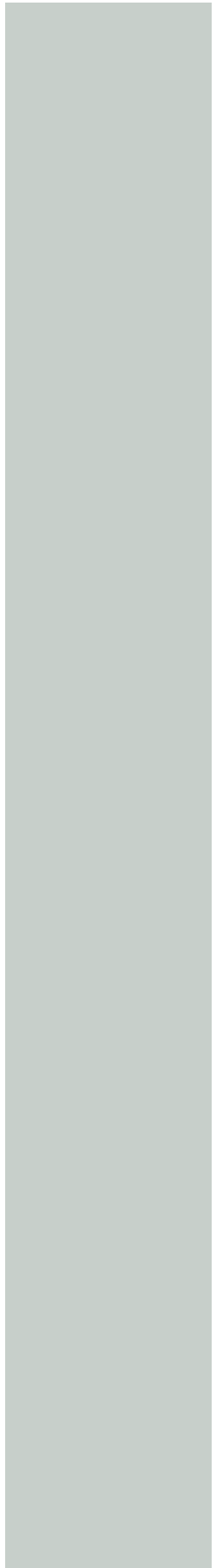


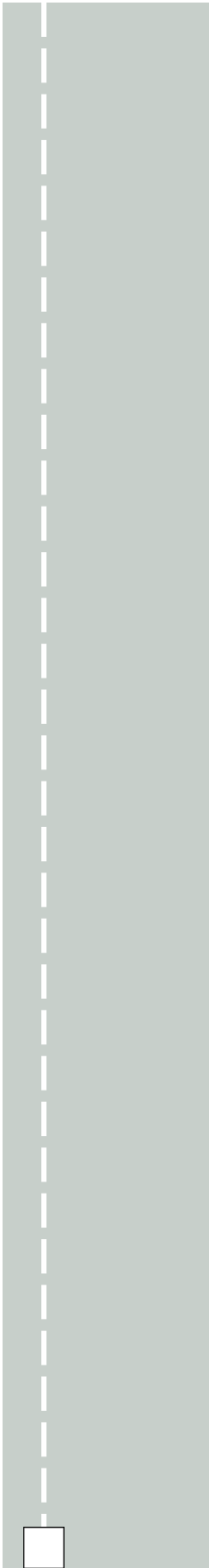


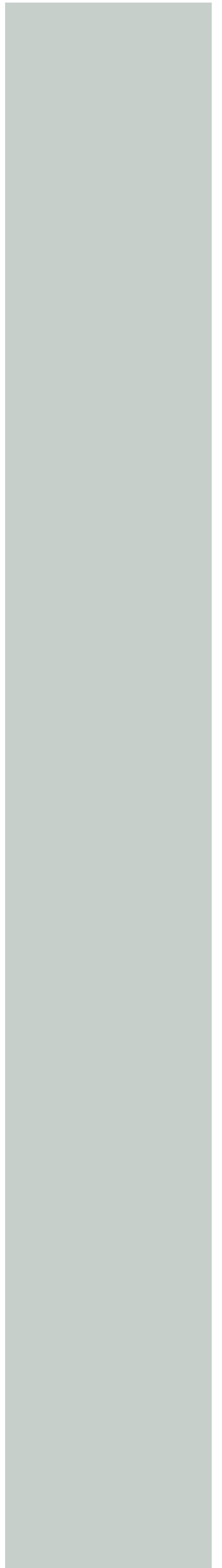


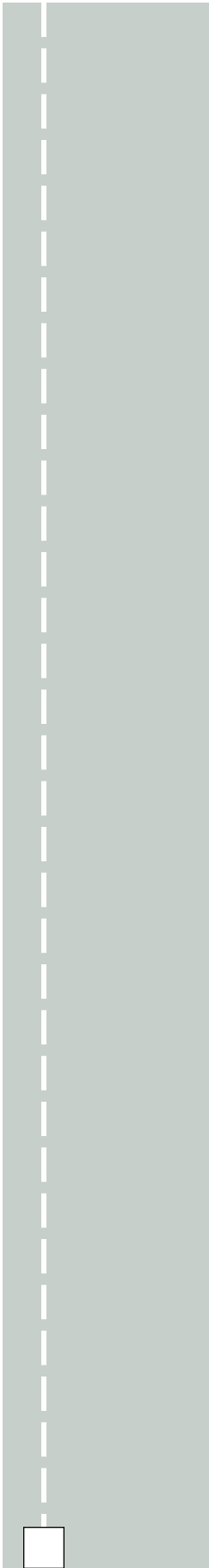


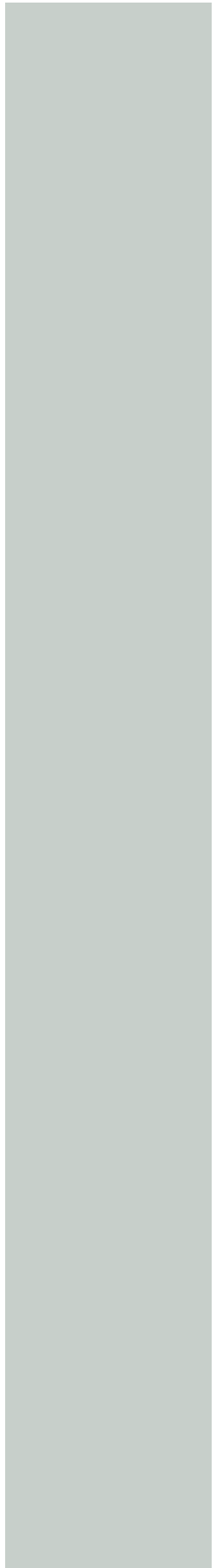


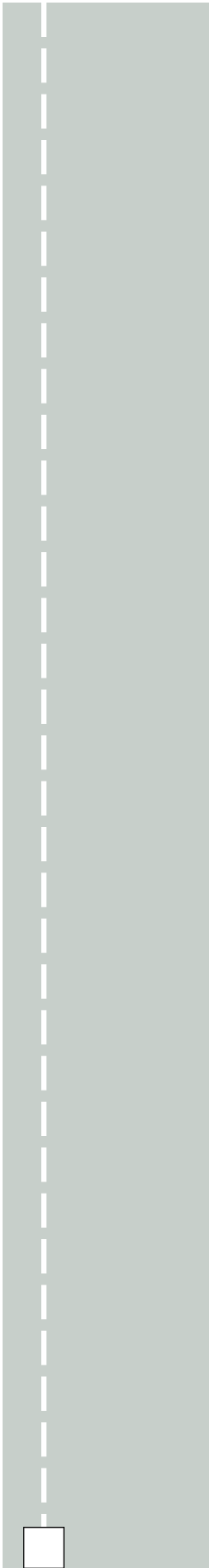




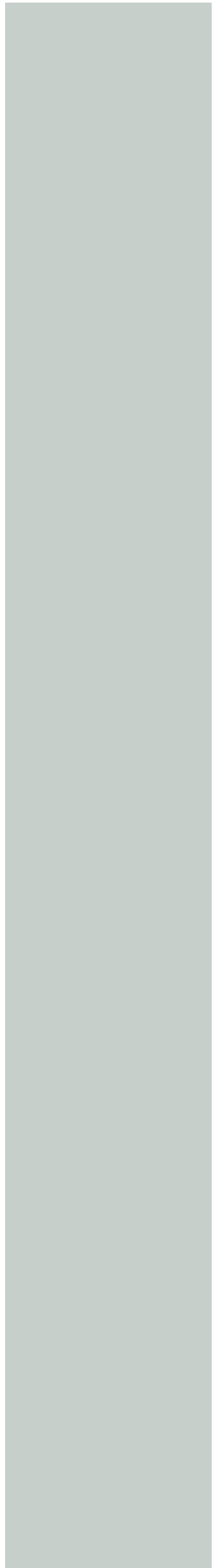











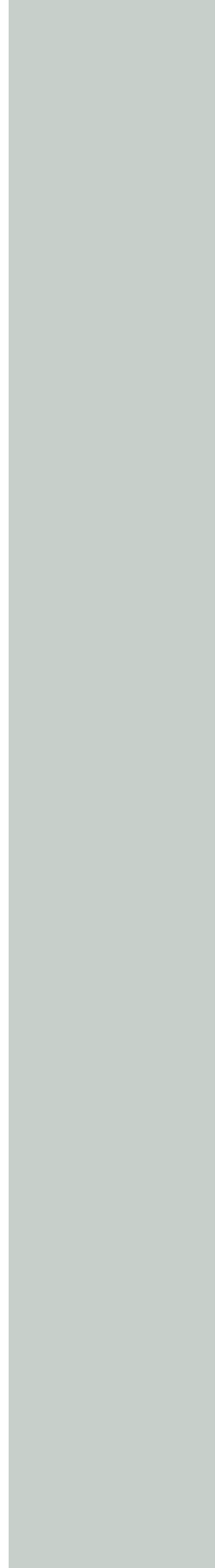


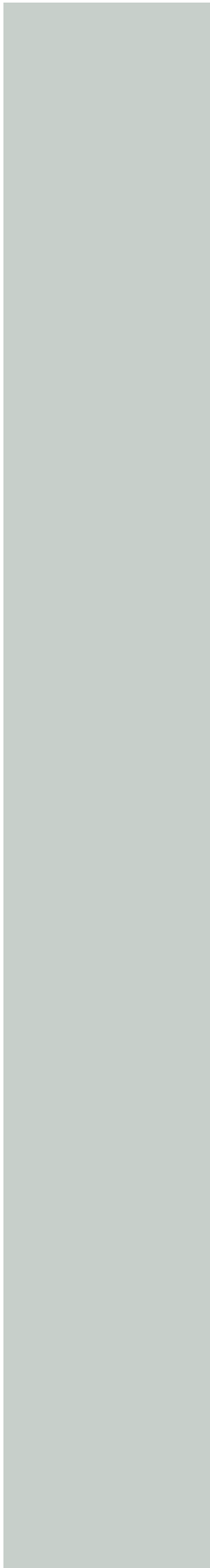


form of XML tags or other common language approaches will provide a more general method for addressing this problem.

Successful implementation will require “open systems” software, whereby vendors publish documentation of their application program interfaces. This


quantifying the amount of invested capital throughout the housing supply






when a customer decides that a wall should be moved, a floor tiled rather than carpeted, or a bay window substituted for mullied window units. Most builders discourage change orders not only because changes can have so many implications for design and construction but also because they may be difficult to price accurately. Yet, in those parts of the industry that thrive on promoting and providing customer service as a central part of the overall process of designing and building a house, change orders are practically inevitable.

Change orders often have implications for building design details and code compliance. Plans may need to be revised. Lists of building materials and products needed to complete the job are affected. New items are added, or one item is substituted for another. Different vendors may be required or different subcontractors may need to be called in for the work. Updated information must be communicated to the site superintendent, to multiple trades, and to suppliers. Typically, change orders affect the project schedule and generate ripple effects that extend to project completion. The change may even affect scheduling of other projects, as in a subdivision. In addition, questions arise as to how to estimate the costs of the change and set an appropriate 13 TD dule.ny

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- Revising the project schedule based on direct impacts on construction labor, availability of materials, and other factors;

## The Home Building Supply Chain






better communicated and even projected. One key to this transition is better information exchange. It is based on the theory that timely and accurate sharing of information will help suppliers accommodate customer needs more quickly and at lower total cost than suppliers who must operate “in the dark.” This project involves the activities described below.

- Define baseline current practices, underlying information flows, and typical systems. The supply chain diagram in Figure 6 encompasses many variations that are not now relevant to every product or situation. The chain itself is also in flux, with flows shifting and new paths developing partly in response to new technologies. This step calls for greater quantification of the framework shown in Figure 6, as applied to particular products, to show the most common paths now taken by those products. The figure also shows arrows corresponding to the direction of product flow, but in reality a two-way flow of information at each stage needs to be identified before it can be enhanced.
- Identify IT tools or enhancements for sharing information up and down the supply chain as well as data flows necessary to streamline selected links.

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- Define a generic subdivision development process, including parties involved, information requirements, and flows, milestones, and outputs. Review current software tools for land developers. The generic subdivision development process will serve as the template for development of next-generation software tools.
  - Using existing software tools as a starting point, implement key steps of the process, including community layout, plan submission, takeoffs for material and labor to build infrastructure, cost estimating, and master scheduling. This would be a first cut at a coordinated approach to using computer tools for pre-construction development work. As noted, the issues parallel those arising with software for managing home construction. It assumes that there are opportunities to enhance or more closely link such tools as already exist.
  - Demonstrate application of the system and evaluate its accuracy and utility





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