Limitations of left-edge algorithm
• Some combinations of nets require more than one horizontal segment per net.

Dogleg wire
• A dogleg wire has more than one horizontal segment.

Combinational network delay.
Sources of delay
• Gate delay:
  – drive;
  – load.
• Wire:
  – lumped load;
  – transmission line.

Fanout
• Fanout adds capacitance.
Ways to drive large fanout

- Increase sizes of driver transistors. Must take into account rules for driving large loads.

Buffers

Add intermediate buffers. This may require/allow restructuring of the logic.

Wire capacitance

- Use layers with lower capacitance.
- Redesign layout to reduce length of wires with excessive delay.

Placement and wire capacitance