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Why The 'Biotech Bubble' Is Economic Nonsense

Oct. 19, 2015 11:51 AM ET

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Basically, that's how and why most "biotechs" started.

The tip of the iceberg

Unfortunately, there is one fundamental hurdle to combining the biotech business model with publicly traded companies: developing new drugs takes a lot of time and money before any profit can be made - a period during which smaller companies, which have no commercial operations, often struggle to raise funds and face pressure from their shareholders and the market. Hence, disappointments and disillusion about the speed at which such companies could actually become profitable must have hit many early investors. In other words, as Gary P. Pisano wrote nearly ten years ago:

[T]he way the industry manages and rewards risks - how businesses are funded - conflicts with the long R&D timetable needed to create new drugs."

A decade ago, biotech companies were still a "relatively new phenomenon" and the level of expectations was probably too high in many investors' mind - perhaps that many did not fully realize the requirements of the pharma industry. Indeed, **starting from a promising novel compound and taking it through all the phases of clinical development until it becomes a marketable product roughly takes between 11 and 15 years** - if everything goes according to plan, and that is not often the case. Additionally, drug developments are very big, risky investments: It costs over \$2.5 billion from discovery until market approval to develop a new drug, on average, according to a recent study. However, once a compound successfully goes through early-stage phases and reaches the end of its development, its valuation increases exponentially because the statistical probability of the new drug reaching the market becomes more substantial (see Table 1).

- Table 1: Statistical probabilities of success in new drugs development

| <i>Phase transition</i> | <i>Average success rate of transition</i> | <i>Chances of reaching the market at this stage</i> | <i>Value increase when passing the stage</i> |
|-------------------------|---|---|--|
| Preclinical to Phase 1 | 90% | <10% | - |

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|----------------------------|-----|-----|------|
| Phase 1 to Phase 2 | 65% | 10% | 50% |
| Phase 2 to Phase 3 | 35% | 15% | 200% |
| Phase 3 to NDA/BLA | 55% | 44% | 80% |
| NDA/BLA to Market Approval | 80% | 80% | 25% |