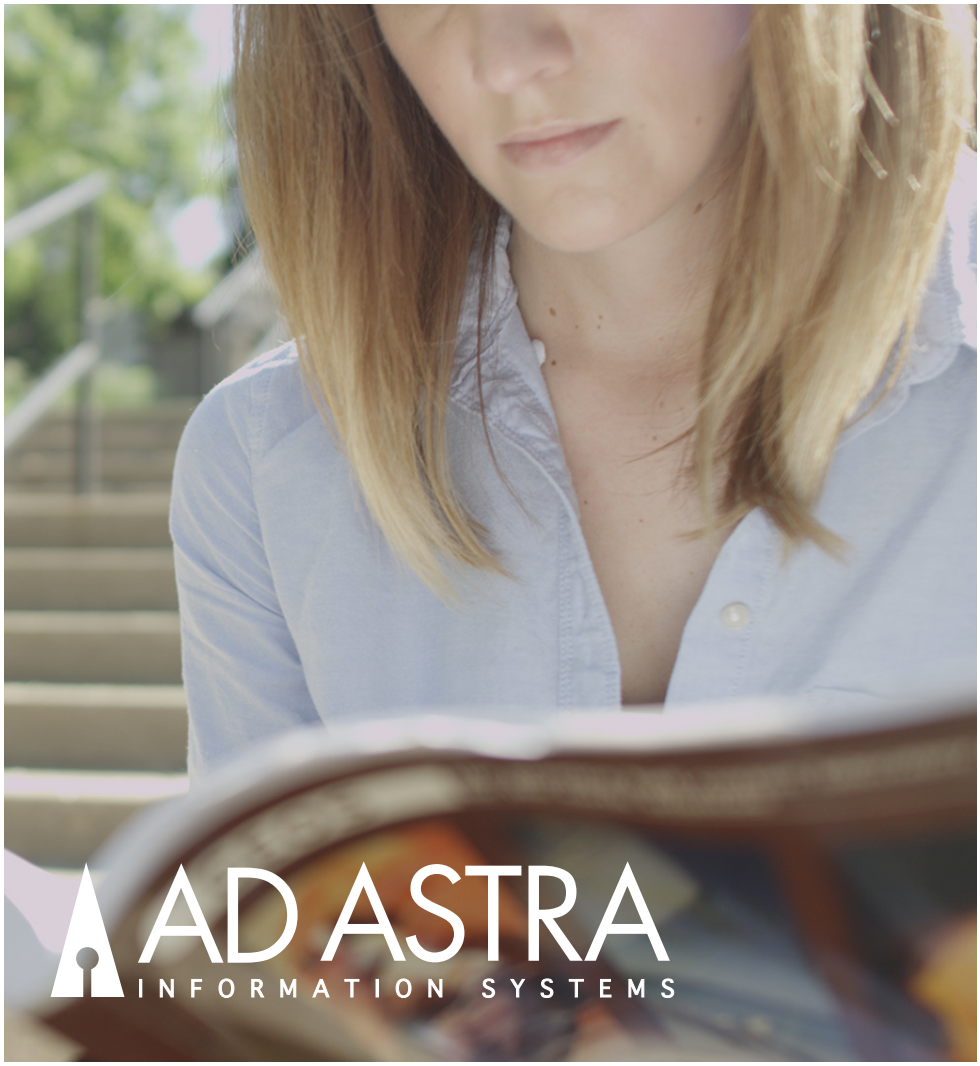

Strategic Scheduling Intelligence White Paper

Revisiting the Iron Triangle

By Tom Shaver, Founder and CEO
Ad Astra Information Systems, L.L.C.

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Breaking the unbreakable relationship between cost, quality and access

In 2008, as our economy began suffering the most significant downturn in recent years, the Higher Education Industry experienced an almost suffocating financial squeeze.

During that year, The National Center for Public Policy and Higher Education and Public Agenda published a report titled *The Iron Triangle*.[1] Its central point was: "In the view of many college and university presidents, the three main factors in higher education – cost, quality and access – exist in what we call an Iron Triangle. These factors are linked in an unbreakable reciprocal relationship, such that change in one will inevitably impact the other."[2] The contention that there is a fixed relationship between cost, quality and access is essentially an argument for more funding. Without more funding, so the argument goes, our institutions are forced to choose between these equally indispensable ideals.

Today, six years later, as we revisit the concept of the *Iron Triangle*, these key points remain:

1. Many higher education institution presidents feel that, without more subsidy, they are stuck
2. Since 2008, subsidy has actually gone down
3. The higher education industry can't afford to be stuck on any of these big ideals

According to the key premise of the *Iron Triangle* from 2008, higher education should now be dead or at least on life support. The only hope would be an unexpected spike in subsidy dollars in the very near future. This would be terrible news if it were true. Our research shows that it's not true. Research from Ad Astra Information Systems offers hope in actionable solutions that are not dependent on increased funding.

For the Iron Triangle to be axiomatic, the following would all have to be true:

1. Higher education can't improve its operational efficiency
2. There is no latent capacity to grow enrollments
3. Quality is only achieved by spending a lot to deliver it

All organizations, especially large and complex ones like colleges and universities, have inefficiencies. Higher education, in particular, could benefit from centralizing some administrative functions and better allocating instructional resources, such as faculty and space. Ad Astra has published a number of findings regarding faculty and space allocation on our AccessToCompletion.com site that detail opportunities to reduce

cost per student without impacting quality or access. Those findings have been gleaned or concluded from data in our Ad Astra *Higher Education Scheduling Index™* [3], a peer database constructed from analysis of data from over 104 educational institutions.

Most institutions are very focused on the quality of their academic "product" and providing academic units the freedom to pursue quality in the ways they see fit. Where the industry has fallen short, is in managing resources in ways that maximize capacity and efficiency. While most schools are convinced that they are at or near their peak sustainable enrollment, the capacity metrics we have collected in the *Higher Ed Scheduling Index™* highlight opportunities for a typical school to support 20% additional enrollment growth with existing resources.

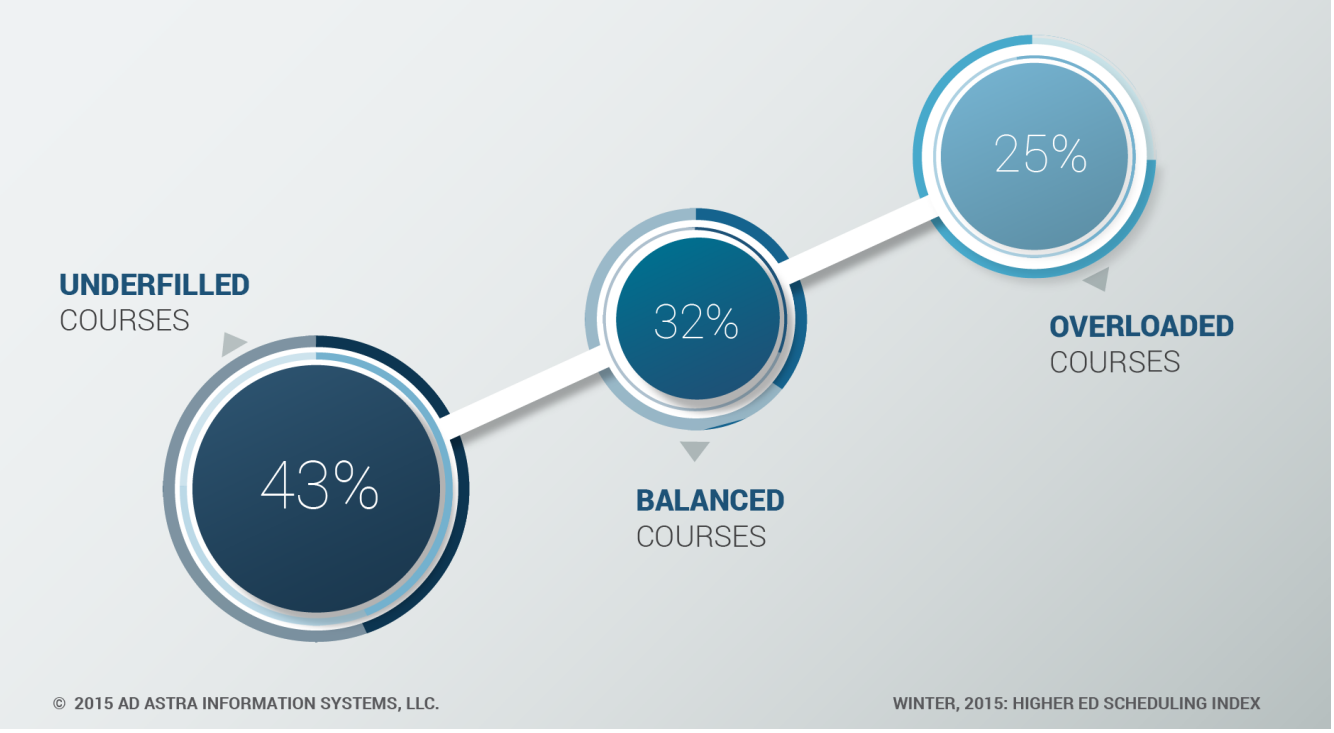
Quality instruction can be delivered in a number of ways today. The most often cited cost-savings strategy is the use of technology (online, hybrid, etc.), but several others are equally valid. Many strategies for saving can be found in the efficiency and capacity opportunities referenced above. Focusing attention on priorities can also lead to savings. The Iron Triangle doesn't factor in the many competing priorities that distract universities from quality undergraduate education such as the funding allocated for research, scholarly writing, athletics programs, etc.

What does all of this mean? It means that the industry is not doomed. It means that creative leaders in every segment of the industry are already mobilized and improving cost, quality and access in the face of stagnant or even shrinking subsidy dollars. It means that higher education should never wave the white flag prematurely, but should steel its resolve to follow the lead of those who have made progress in these lean years.

"The industry is not doomed - higher education should never wave the white flag prematurely, but should steel its resolve to follow the lead of those who have made progress in these lean years."

The industry still faces considerable challenges, but it's far from dead. As Mark Twain quipped in 1897 regarding inaccurate reports that he was seriously ill or dead, "the report of my death was an exaggeration."

Chart 1



Debunking the Three Iron Triangle Myths

Our research at Ad Astra exposes deficiencies in the three implicit assertions of the Iron Triangle:

1. **We can't improve our operational efficiency.** Our data from the *Higher Education Scheduling Index™* focuses on academic resources – instruction and academic space – which make up about 58% of the core operating budget of a typical institution. Opportunities for improved efficiency are pervasive.

   On most campuses, instructional resources are distributed through a course scheduling process that is not optimized for efficient allocation.

   • On average, census enrollments equal only 76% of the enrollment caps in a typical schedule. (see Chart 1)

   – Even worse, this ratio is achieved by overfilling 25% of the courses (restricting graduation progress).

   – Overfilling some courses offsets the 43% of our curriculum comprised of under-filled courses.

   • This means that only 32% of the curriculum has reasonable alignment with changing student course needs.

   • The industry's increasing reliance on adjunct instruction is a byproduct of this inefficiency. We have seen multiple institutions leverage data to improve course fill rates significantly and save millions of dollars in adjunct instructional costs.

> **"While most schools are convinced that they are at or near their peak sustainable enrollment, the capacity metrics we have collected in the *Higher Ed Scheduling Index™* highlight opportunities for a typical school to support 20% additional enrollment growth with existing resources."**

Inefficient course scheduling and other solvable scheduling problems lead to poor space utilization and reduced student satisfaction.

• As an industry, only about 62% of the seats are filled during the scheduling process.

– More than half of this issue comes directly from filling only 76% of the enrollment caps.

– The balance comes from assigning rooms based on department ownership versus the capacity needs of the course offering.

– Centralized management of scheduling and data analysis enables institutions to improve seat fill ratios and more equitably use campus space.

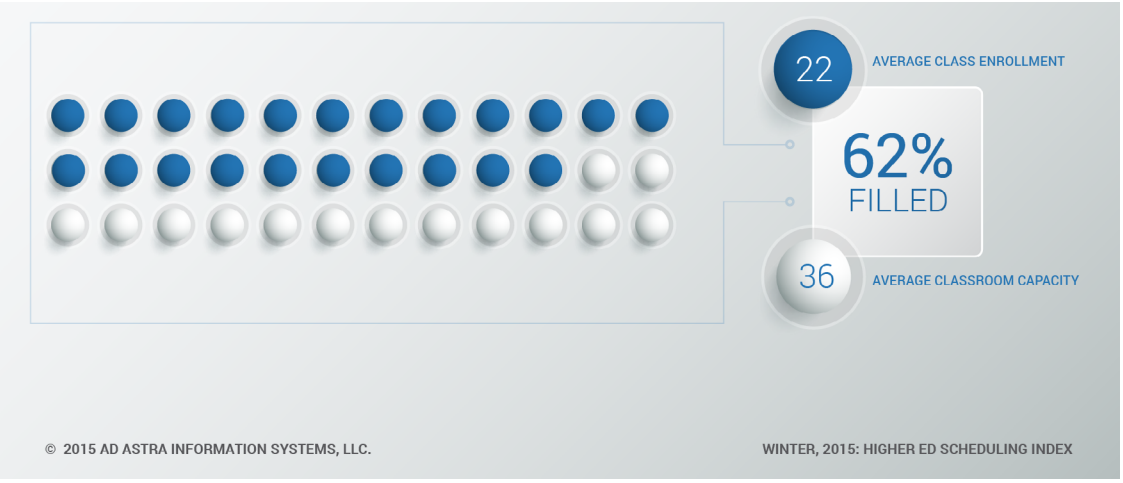
• Typical classrooms are used only 48% of the scheduling week.

– Compression of courses into the primetime hours in a week limits students' ability to get full schedules and decreases overall utilization of classroom space.

– Meeting patterns that overlap and conflict create wasted capacity and restrict student schedules.

2. **There is no latent capacity to grow enrollments.** Most institutions are convinced that they are out of space and that they don't have sufficient faculty to grow enrollments. Many even feel like they're overextended with current enrollments. We've seen that this isn't always objectively true, at

Chart 2



least in an aggregate way.

Once we identify isolated bottlenecks to growth – certain room types and instructors credentialed to teach constrained courses – we see that most campuses have significant latent capacity.

- With 43% of our courses underfilled at census date (see Chart 1), there is plentiful capacity to support more students with the same number of offerings and instructors.

  – Courses that are statistically not needed by students – and can be removed from the schedule – make up about 20% of courses offered in a major term for a typical institution.

  – Adjunct instruction gives most institutions considerable flexibility to reallocate resources from low demand courses to high demand courses.

- On average, classrooms are scheduled for only 48% of the standard scheduling week industry wide. Therefore, capacity is not a function of less-than-needed aggregate space; it's a function of primetime bottlenecking in prime rooms.

  – Primetime bottlenecking can be mitigated by addressing "off-grid" scheduling, a practice that wastes 15% of the primetime room hours available on a typical campus.

  – More data-driven course schedule building can mitigate last-minute cancellations which rob some campuses of 10%+ of their usable capacity.

  – Better filled sections, from better course scheduling, can also improve our typically low classroom fill rates from 62% (see Chart 2) to more than 75% on some campuses.

3. Quality is only achieved by spending a lot to deliver it.

While quality is harder to define subjectively than efficiency or capacity, key quality drivers are very manageable. Most institutions would agree that, overall, their full-time faculty members are their best instructors. Yet, increasingly, campuses schedule more adjuncts because of a perceived lack of capacity of full-time faculty and adjuncts' lower average marginal cost. As shown above, multiple opportunities exist to allocate full-time faculty more effectively which leads to a higher percentage of student credits taught by full-timers. Ad Astra has seen institutions reduce their overall instructional costs while dramatically increasing this credit hour percentage – effectively increasing quality with less, not more money.

Another indicator of quality receiving more attention now than ever before is student success. Ad Astra's research as reflected in the *Higher Ed Scheduling Index™* has shown that student-friendly, efficient schedules may be the most direct approach to improving students' productive progress toward degree completion.

Through data-driven decision making schools have improved productive credit hour progress for a typical student while decreasing operating costs.

Summary

While the premise of the *Iron Triangle* rests on the assumption that all three of these myths are true, research has proven that not to be the case. It's easier to throw money at inefficiency and ineffectiveness, but it's far from the only option. Given challenges from the current economic climate and the need to stop the dramatic increases in tuitions, allocating more money toward these problems might be the only option that should **not be** considered.

It's time for higher education to make smarter, more informed resource allocation decisions. Maximizing the use of limited academic resources through more efficient, student-friendly scheduling practices has proven that it can advance student success and reduce the power of the Iron Triangle.

Endnotes

1. Immerwahr, J., Johnson, J., & Gasbarra, P. (2008). *The Iron Triangle*. Retrieved from http://www.highereducation.org/reports/iron_triangle/introduction.shtml

2. *Ibid.*

3. Ad Astra Information Systems, L.L.C. Access to Completion. Retrieved from http://accesstocompletion.com/