California State University, Sacramento
Strategic Plan for Information Technology
Including the Annual Review and Revision
January 2011

2010 Annual Review of the Plan

This latest version of the plan includes added and revised content, based on the first annual review of the original 2009 Strategic Plan for Information Technology by the IT Steering Committee. During the 2010 annual review, the IT Steering Committee asked that a more detailed progress report of the original plan also be prepared. That progress review is found as Appendix A, 2010 Annual Progress Report on the Strategic Plan for Information Technology.

Aside from making specific revisions to the plan that are shown by bolded italics in the text below, the Committee noted that substantial progress had been made in mitigating many of the weaknesses in IT planning and services that had been identified in a campus survey conducted in early 2009. In particular, it was noted that:

✓ This plan itself, its specific targeted goals, and the annual review indicate that the campus has made substantial progress in both planning for information technology and in focusing more clearly on defining user outcomes.
✓ Much progress has been made in better aligning technology with pedagogical needs, especially through the relatively rapid progress made in improving and adding to campus classrooms, computer labs, and informal learning spaces.
✓ Much more attention has been focused on understanding constituent needs for information technology, with several surveys of faculty and student IT needs already completed and more on the way.
✓ A concerted effort has been made to understand and meet local campus IT needs, at the same time institutional IT needs are being better addressed.
✓ Numerous improvements have been made in both coordinating and reducing costs for IT procurement, with planning underway for further improvement.
✓ Although there is much more to do, many improvements have been made in communicating more widely about IT issues, including regular contributions to the Monday Bulletin, increased targeted messaging to faculty, staff, and students, and ongoing enhancements to campus communications systems such as MySacState.

For further detail, including information on service gaps that still need to be addressed, please refer to Appendix A.
**Strategic Planning for the University & Planning for Information Technology**

“At the state level, the years now in view will be a time characterized by population growth and demographic change, rapidly changing technologies, and workforce transition....And these years will be a time of sweeping change for all of higher education, as technology will continue to expand capacity to meet new populations and to change traditional ways of doing the work of teaching, research, and service.”¹

This statement from *Access to Excellence*, the California State University’s long-range strategic plan, highlights the critical role played by technology as part of both the context and solution for meeting the strategic needs of the University. Sacramento State’s own institutional Strategic Plan² begins by noting rapid global technological change as one of the four major contextual forces affecting our campus, while the university’s strategic vision itself highlights the importance of utilizing ‘the best in teaching and learning technology’ for our faculty and students.

Keeping up with these global changes in technology, coupled with the goal of enhancing the use of technology for the core teaching and learning mission of the campus, will be a significant challenge. The steady decline in state resources as a proportion of higher education funding, along with the current economic recession and ongoing California budget crisis only add to this challenge. It will be necessary for all of us to plan together carefully and strategically to ensure we use information technology to respond effectively to these critical issues, in a time of declining resources.

Sacramento State created its first strategic plan for the use of information technology in 2009, responding to the fact that information technology is now embedded in nearly every endeavor of the university. From recruitment of students, to effective teaching and graduation of students, to support of student success in learning both in and out of the classroom, and for the use of data for strategic decision-making, information technology is essential to meeting the strategic needs of the campus. Information technology has thus become a resource that’s as critical to the university as its staffing, facilities, and budget.

The intent of this *Strategic Plan for Information Technology* is to be proactive rather than reactive in planning for use of our limited information technology resources. This plan begins by establishing a mission, vision, and core set of principles and values for the use of information technology, followed by definition of perceived strengths and weaknesses of IT at Sacramento State. Finally, the plan defines a set of sixteen broad strategic goals for information technology, with each such goal comprising a set of more specific objectives that can be implemented within the next one to three years.
Mission, Vision, and Core Values

Our Information Technology Mission

_California State University, Sacramento will use its information technology resources for furtherance of the university’s strategic mission, ensuring a continual focus on support of access to education, excellence in teaching and learning, the quality of the student experience, and effective administrative services._

Our Vision for Information Technology

California State University, Sacramento will be known throughout the CSU system, and increasingly throughout the nation, both for its effective use of information technology for support of its core educational mission and for improving the efficiency and effectiveness of its business processes.

- Sacramento State will be known for its effective planning and use of information technology resources for the recruitment, retention, and graduation of its students and for enhancement of both excellence in teaching and learning and faculty/student scholarship.
- We will increasingly provide the best in teaching and learning technologies to our faculty and students both in and outside our classrooms and will also provide the support and training required to use those technologies.
- We will continuously assess our use of information technology resources and will then adapt our use to meet the changing needs of our state and our student, faculty, staff, and auxiliary populations.
- Sacramento State will be recognized for its efficient and effective use of administrative technology for the improvement of business processes for its students, prospective students, faculty, and staff, as well as for the provision of support and training for use of those technologies.
- We will shift our emphasis from merely managing IT hardware and services to managing information and its effective application for decision-making about our strategic needs.

Core Values for Information Technology

The Information Technology Steering Committee conducted a campus-wide survey regarding values for information technology in 2008, to assist in development of the following core values for information technology. In order to prevent those values from
being mere platitudes, the Committee also developed a set of related actions to suggest what Sacramento State will actually do as a result of holding these values.

<table>
<thead>
<tr>
<th>We Value...</th>
<th>We Will Therefore...</th>
</tr>
</thead>
<tbody>
<tr>
<td>...using information technology to solve educational problems, not just using technology for its own sake.</td>
<td>...focus on proven uses of technology, where evidence gives us confidence the technology is likely to solve our strategic educational problems.</td>
</tr>
<tr>
<td>...focusing our information technology resources on the primary mission of the university.</td>
<td>...consistently use our IT resources to support excellence in teaching, learning and research.</td>
</tr>
<tr>
<td>...strategic planning and being fully supportive of shared institutional strategic goals.</td>
<td>...focus our resources on the key shared goals of improving recruitment/retention/graduation, evidence- based decision-making, and improvement of campus-wide engagement.</td>
</tr>
<tr>
<td>...consideration of localized needs for diverse, unique, and innovative information technology applications.</td>
<td>...consider local needs in our planning and be mindful of the innovations, unique solutions and needs of distinct campus units.</td>
</tr>
<tr>
<td>...inclusiveness in IT planning.</td>
<td>...plan collaboratively with faculty, staff, and students in a coordinated team approach, seeking input from across our campus and valuing careful listening to feedback.</td>
</tr>
<tr>
<td>...working collaboratively to promote increased efficiency and effectiveness</td>
<td>...carefully coordinate our resource planning for information technology campus-wide, in order to avoid unnecessary duplication and cost and improve efficiency and effectiveness of services.</td>
</tr>
<tr>
<td>...effective customer service in the provision of information technology to our campus.</td>
<td>...make it easy for faculty, staff and students to understand and use information technology, while being attentive and responsive to user needs.</td>
</tr>
<tr>
<td>...equitable minimum standards for all in the availability of information technology resources.</td>
<td>...work together to ensure there are not haves and have-nots on our campus in the availability of essential baseline IT resources.</td>
</tr>
<tr>
<td>...use of information technology to enhance communications campus-wide.</td>
<td>...enhance the email, web, learning management, and portal services that are needed to improve campus-wide engagement.</td>
</tr>
<tr>
<td>...use of effective methods of self-assessment for continuous improvement.</td>
<td>...develop methods for assessing satisfaction with IT services, while also using that customer feedback to continuously improve IT services.</td>
</tr>
<tr>
<td>...providing accessibility to information technology services.</td>
<td>...provide equally effective access to all campus users of information technology by effectively...</td>
</tr>
</tbody>
</table>
implementing Accessible Technology Initiative plans for Instructional Materials, Web Development, and Procurement.

...protection the confidentiality, security, and privacy of the information entrusted to us.

...implement information security and privacy policies that will protect the identity and confidential data of our faculty, staff, and students.

...sustainable uses of information technology.

...encourage ‘green’ IT practices campus-wide that will foster conservation and reduction in energy consumption, waste, and costs.

...providing effective and efficient campus administrative technology.

...work together to both identify inefficiencies and to find more effective means to meet the needs of our students, faculty, and staff.

### Scanning Our Previous Information Technology Environment

Effective strategic planning is dependent on a clear understanding of the context in which such planning operates. The aforementioned CSU Access to Excellence plan and Sacramento State’s own campus-wide Strategic Plan outline the most important contexts for institutional planning. Both plans were consulted in detail during preparation of this document, to ensure our information technology planning is aligned with both CSU and campus strategies.

Two other documents provided more specific contextual information about the use of information technology at Sacramento State. The Gap Analysis for Information Technology was developed in 2007 by the new Chief Information Officer as a quick environmental scan of the state of information technology on campus at that time. That document also summarizes the outcomes of several previous studies of information technology at Sacramento State, including three external studies, two CSU-wide studies, and one internal campus study. The Gap Analysis is too lengthy to be summarized in this document and can be found for review at [www.csus.edu/it/strategicplanning](http://www.csus.edu/it/strategicplanning).

In 2008, the IT Steering Committee also conducted a campus-wide survey of faculty and staff at Sacramento State to define specific perceived strengths and weaknesses for information technology at that time. A complete review of those strengths and weaknesses can be found at the same IT strategic website noted above under “IT Surveys”, including a complete listing of specific comments provided by faculty and staff.

Key strengths of information technology identified by faculty and staff in the 2008 survey included:

- The campus recognizes the pivotal role played by information technology
• We have a student body that is strongly interested in using information technology to improve learning
• Our faculty is widely interested in using technology for teaching
• The campus has high quality IT staff, provides good localized IT support, and recognizes the need to use IT for unique local needs
• The campus is working to make technology accessible for all, and
• Growing strengths of IT at Sac State include:
  o The use of technology to communicate a campus identity
  o Use of technology to improve business processes
  o Using technology for program assessment and improvement, and
  o Enhancing the privacy of information.

The above strengths have greatly assisted our campus in allowing the many improvements in information technology that have occurred on campus in the intervening two years.

Key perceived weaknesses of information technology at Sacramento State in 2008 included:

• Inadequate planning for replacement of IT equipment and weak processes for acquisition of IT hardware and software
• IT resources were not aligned with pedagogy, including:
  o Inadequate technology and support in classrooms, and
  o Undersized student technology facilities
• Communication about IT was lacking on campus and there was a resulting lack of awareness about information technology services, with many on campus not knowing where to go for IT help
• IT resources were not adequately aligned with constituent needs
• Insufficient attention to diverse local IT needs, possibly due to spotty and inequitable distribution of IT resources
• Little previous planning for IT and little coordination and collaboration in that planning, with no clear focus on IT outcomes

As noted in the annual review section at the head of this document, much progress has been made in mitigating the above weaknesses. Further detail can be found in the 2010 Progress report in Appendix A.

Finally, in early 2009, the IT Steering Committee informed the campus that the draft Strategic Plan for Information Technology was available for review, solicited written feedback from across campus and held a series of open forums on the draft plan. Documents detailing both the feedback received and the Steering Committee response to that feedback can also be found at www.csus.edu/it/strategicplanning. Of particular interest are the documents Institutionalization As An Organizational Model for IT and Frequently Asked Questions, as these items provide the Committee viewpoint on a number of key issues raised.
Strategic Goals for Information Technology At Sacramento State

The primary purpose of our strategic planning is to identify and prioritize a key set of strategic IT goals for implementation within a three to five year time-frame. As noted by the Strategic Planning Council (SPC), priorities for such goals tend to emerge naturally from environmental scans, such as those provided by the Gap Analysis, SWOT analysis and annual review noted above. As the SPC defines the process for using the results of such analyses:

“The overlap of internal weaknesses and external threats shapes the organization’s highest priorities, directing resources toward situations that, if not addressed, could threaten the organization. The ability to leverage internal strengths against external opportunities creates a second set of priorities that, if addressed expeditiously, should benefit the organization.”7

The resulting sixteen strategic goals listed in this plan are not intended to address all the possible applications of information technology on campus. They are rather intended to identify the IT priorities that are most likely to either leverage the current strengths of information technology that are exceptionally promising or address extant weaknesses that are exceptionally threatening.

Under each of the strategic goals identified in each category (i.e., 1,2,3...), the IT Steering Committee has also identified more specific priority objectives targeted for implementation over the coming one to three years (i.e., a,b,c...).

I. A Focus on Teaching and Learning & the Student Experience

“The highest and best use of academic technology is to help faculty provide a quality education that focuses on the student and enables the learning, teaching, research, and creative scholarship that quality education requires.”8

“...IT resources that are unique to teaching and research programs require special attention. Therefore, the CIO must work with deans, department chairs and faculty to ensure support for these resources is integrated into the Information Technology Plan.”9

The above planning principles cited by the CSU-wide Academic Technology Planning Committee and Information Technology Advisory Council (ITAC) summarize the first major tenet of strategic planning for information technology. That is, information technology should be effectively integrated with pedagogy to promote excellence in both teaching and learning and the quality of the student experience. Key strategic goals for information technology in these two critical sub-categories are listed below.
Excellence In Teaching and Learning

1) An ongoing process will be implemented to identify, prioritize, and address academic technology needs at all levels
   a. Multiple methods for collecting data from faculty, staff and students will be established to determine the needs and uses of academic technology, with those data used to proactively adapt and improve academic technology services.
   b. Annual surveys or assessments of faculty and student needs will be conducted and the results clearly communicated to all campus units.
   c. Metrics will be developed for the regular assessment of satisfaction and effectiveness of academic technology services for teaching and learning, with those metrics built into annual surveys and the results clearly reported campus-wide.
   d. Methods will be developed to identify faculty and student needs for experimental and innovative methods for the use of information technology to enhance teaching and learning and to discern how to best meet those needs.

2) A reliable, scalable, and well supported system for delivery of learning resources will be provided
   a. We will facilitate enhanced use of our campus-wide learning management system and will take advantage of both collaborative CSU standards and enhancements that include the most current features for broader access to learning materials, assessment, mobility, communication, and flexible use of varied teaching methods.
   b. Faculty and students will be provided anytime and anywhere access to personal files, class files, shared files, and instructional and learning materials.
   c. The campus will develop flexible options for course offerings that, as appropriate, take advantage of technology-assisted, hybrid and fully online approaches to learning.
   d. The campus will provide access to accessible repositories of local, regional, and international digital content for instruction, learning, and scholarship and provide reliable access to that content.
   e. Systems for delivery of both teaching materials to faculty and learning resources to students should be developed that are flexible, based on universal design principles, and that allow use by those with varied teaching and learning styles and needs.
3) Effective teaching and learning spaces will be created for both students and faculty, with particular attention to the effective and flexible use of academic technology in classrooms, computer labs, and informal learning spaces
   a. A practical five year plan will be developed for the design, enhancement, maintenance and support of flexible technology-assisted learning spaces, including identification of funding sources.
   b. A practical five year plan for the provision of effective computer lab resources for faculty and students will be developed and funding sources identified.
   c. All plans for new and renovated buildings and spaces will include plans for incorporation of enhanced teaching and learning technologies and spaces.
   d. A related plan will be developed for the provision of informal student learning spaces outside formal classrooms and labs.

4) A distributed and connected system of instructional technology support shall be created, based on recognized best practices, with coordination of services both centrally and with cross-campus units
   a. Support and training for faculty use of technology for teaching will be enhanced through development of specific programs designed to flexibly meet faculty needs identified in annual surveys.
   b. Support and training for student use of technology for learning will be enhanced through development of specific programs designed to flexibly meet student needs identified in annual surveys, with special attention to development of services through the Student Technology Center.
   c. The Service Desk will provide a single place for faculty, staff and students to be connected with seamless services from both institutional and local support.

Quality of the Student Experience

“Reared in a digital age, many of today’s students have an approach to learning that differs dramatically from norms of even ten years ago.”

[Among four overarching goals we want to ensure] “high levels of student satisfaction with both the education they receive and the student services that support instruction....”

5) An ongoing process will be implemented to identify, prioritize, and address student technology needs at all levels
   a. Multiple methods for collecting data from students and faculty regarding student technology needs should be utilized and plans
developed for translating those needs into effective IT services. The university will in particular participate in the annual nationwide survey of undergraduate student IT needs and base follow-up surveys on the findings of that national survey.

b. Plans for addressing such identified needs will be revisited on an annual basis and results of that analysis communicated back to students.

c. Student satisfaction with the administrative processes they use will be assessed annually and plans developed to improve those processes based on student needs.

d. Metrics will be developed for the regular assessment of satisfaction and effectiveness of student technology services, with those metrics built into annual surveys and the results clearly communicated to all campus units.

e. Methods will be developed to identify student needs for experimental and innovative uses of information technology to enhance learning and student life and to discern how to best meet those needs.

6) **We will provide technology services to students that support student preparedness in learning skills and study skills**

a. Emphasis should be placed on implementation of information technology services for students that can positively influence recruitment, retention and graduation rates.

b. *We will work across divisions to develop specific services to enhance student academic and other processes such as advising, orientation, registration, financial aid, fee payment, and employment services.*

c. Services will be developed to support student use of computer labs, classrooms, and other spaces for learning.

d. Students will be provided with increased access to both general use and discipline-specific software for learning.

e. Specific training opportunities and increased availability of trained staff will be provided to support student use of technology for learning.

f. Equal access to technology will be provided to all students.

7) **Improve communications and collaboration between faculty, staff and students and between students and other students both within and beyond the classroom**

a. Capability will be provided for students, faculty and staff to send messages targeted at specific groups, with special
emphasis on communications related to both teaching and learning and student life.

b. Our student web portal will be continually enhanced to offer a single point of entry and interaction with the priority academic and student life resources needed by our students.

c. **Student need for use of a variety of tools and technologies for campus communications will be regularly evaluated, to ensure we are meeting varied student communication styles and providing interactive, group-oriented, and individualized services.**

d. Targeted access should be provided to coordinated campus calendars, with information on both academic and co-curricular activities.

8) **Provide increased access to technology resources for all students anytime and anyplace**

   a. **Students should have access to instructional materials, personal files, email, learning management systems, collaborative and social tools, and other learning resources on a 24/7/365 basis.**
   
   b. Global awareness and communication by students should be supported through access to learning resources both inside and outside the classroom and through access to appropriate campus resources from anywhere in the world.
   
   c. All instructional materials, web resources, and information technology resources should be accessible to all students on an equal basis, including provision of equal access to services for all and elimination of barriers to the use of information technology.
   
   d. Information technology resources should be provided to support student learning across the breadth of the student experience, including student life activities, recreation, clubs, and organizations.

II. **Ensure Further Alignment With Our Campus-wide Strategic Goals**

“The question here no longer concerns if information technology has a role to play in campus conversations and public discussions about assessment and outcomes. Rather, the issue before us...concerns when college and university IT leaders will assume an active role, a leadership role...bringing IT resources and expertise – bringing data, information, and insight – to the critical planning and policy discussions about institutional assessment and outcomes that affect all sectors of U.S. higher education.”

This second set of goals will be met through the provision of comprehensive data warehousing and business analytic functions, with self-use tools disseminated widely across campus through easy-to-use interfaces and data dashboards. Specifically:
9) **Data warehousing and analysis resources will be effectively deployed to support enhancement of recruitment, retention, and graduation rates**

   a. Comprehensive data warehouse tools for support of the collection, data warehousing, reporting, and analysis of key data elements correlated with recruitment, retention, and graduation will be implemented.

   b. *Procedures will be developed to provide the training and support required for the effective use of these tools by faculty, staff, and students involved in the enhancement of recruitment, retention and graduation.*

   c. *Data to facilitate student self-management of their academic and campus service needs will be provided directly to students.*

10) **Information technology resources will be effectively aligned with campus-wide strategic goals for evidence-based decision-making**

    a. Data warehouse and business analysis tools for budgeting, business process analysis, and program planning will be provided to decision-makers throughout the campus.

    b. *Information technology tools will be made available to enhance data analysis, assessment and decision-making for institutional initiatives and processes.*

    c. *Data services will be provided that facilitate more seamless pathways between high schools, community colleges, and Sacramento State.*

11) **Sacramento State’s information technology resources will be used to improve campus-wide communication and engagement**

    a. Specialized versions of the campus web portal will be provided for both faculty and staff and for recruitment of students.

    b. *Campus electronic communications will be made more reliable and consistent through consolidation and coordination of email communications, facilitation of mobile communications, further development of messaging and digital signage systems, and development of personalized communications tools.*

    c. A campus-wide web steering process will be established to enhance campus web communications.

    d. Campus-wide emergency communications systems will be reviewed and enhanced on an annual basis.
III. Efficient and Effective Use of IT Resources

“It is recommended that all [information technology] resources should be acquired within the context of the Information Technology Plan, and operated and maintained in accordance with campus and System standards and practices.”13

Information technology resources form a critical and growing part of the daily work of the campus, making information technology a truly campus-wide strategic resource. Our strategic goals must therefore ensure that we:

12) Implement a sustainable, campus-wide budget and funding model for information technology.
   a. Planning and budgeting for information technology should be coordinated at the institutional level to ensure alignment with strategic planning, the minimum amount of duplication and the greatest efficiency in the use of limited resources.
      • Institutional coordination of planning and budgeting will occur for all funding sources including All University Expense accounts, applicable auxiliary accounts, self-support accounts, and capital funding.
   b. A plan should be developed and availability of funding identified for campus-wide refresh of information technology at appropriate intervals.
      • A plan will be developed for periodic refresh of all campus computers and software at appropriate intervals.
      • Baseline refresh of technology should be complemented with consideration of campus-wide needs for more advanced technologies.
   c. IT staffing and training resources should be coordinated campus-wide to ensure alignment of such staffing with both campus strategic goals and with CSU, peer, and Educause standards.

13) Implement sustainable assessment processes for monitoring and evaluation of business processes to ensure effective IT-based customer services and provide mechanisms for using feedback to improve those processes and services.

   a. Work across all divisions to assess priority business process needs for information technology on an annual basis.
   b. Review priorities for customer service enhancements for those identified business processes on an annual basis and develop a prioritized list of service improvement projects.
c. Emphasize increases in online self-help services, as well as training and support for priority business process and customer service needs.

d. Assess satisfaction with resulting customer services on an annual basis.

14) **Clearly communicate through ITAC the impact of CSU mandates that affect campus information technology and plan proactively for resources needed to address those mandates.**

   a. *Identify opportunities for collaborative activity with other CSU campuses to increase standardization and reduce the cost of IT.*
   
   b. Plan for provision of institutional resources to meet mandated requirements for CSU-wide audits and other mandates.
   
   c. Encourage collaboration across campus divisions on IT issues requiring coordination with the Chancellor’s Office.

15) **Create a seamless CSU-wide experience for users of our campus information technology by providing network, web, and account processes that are ubiquitous, based on accepted best practices, and not limited by organizational boundaries.**

   a. Provide access to all CSU information technology resources for faculty, staff and students through a single, secure user account and password and a single seamless network.
   
   b. Provide seamless transitions in the use of IT resources for new and departing students, faculty, and staff.
   
   c. Coordinate web services campus-wide through provision of equitable access to advanced staff expertise, training, content management systems, web templates, standards, and web accessibility services.

16) **Provide shared institutional IT resources that take advantage of best practices, economies of scale and standardization, while also providing tools for differentiated local management of IT service components.**

   a. Provide equitable campus-wide access to resources for support of information security and the accessibility of technology.
   
   b. Provide institutional coordination of IT software and hardware acquisition, to lower both procurement and life-cycle costs for all.
   
   c. Provide institutional server and application management services, including robust access to virtual server environments and tools for local management of institutionally managed resources.
   
   d. Provide enterprise-quality storage systems and processes with robust security and backup services for faculty, staff and students, including access to management tools that allow local management of storage.
e. Provide institutional coordination of desktop support services, ensuring the ability to meet both institutional and local needs.

**Conclusion**

A strategic plan should be a living document, subject to review and revision on an ongoing basis. This current plan thus reflects the latest thinking of the Information Technology Steering Committee and its associated Academic and Administrative Computing advisory committees, based on the first annual review of the plan in 2010. Input from the campus on both the plan and its implementation is always welcome and can be provided at any time by emailing to itfeedback@csus.edu.

---

1 Board of Trustees of the California State University, “Access to Excellence, A Strategic Plan for the California State University” (Long Beach, CA, May, 2008), p. 5. [http://www.calstate.edu/accessoexcellence/](http://www.calstate.edu/accessoexcellence/)


3 See [http://www.csus.edu/irt/strategicplanning/surveys.stm](http://www.csus.edu/irt/strategicplanning/surveys.stm)


5 The three external studies were WTC (2007), Nicolson (2005) and Thomasen (2004). In addition, a CSU-wide IT funding gap study was completed by the Information Technology Advisory Committee in 2004 and a survey of CSU faculty on all campuses was conducted and reported by an ad hoc Academic Technology Planning Committee in 2004. The internal report on academic technology was done by the Academic Information Technology Committee of the Faculty Senate in 2004.


7 SPC, p. 4.


10 Access to Excellence, P. 17.


13 Ernst, p.1